EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	20237	porous near3 polymer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2007/09/24 09:56
L2	286167	electrolyte	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2007/09/24 09:56
L3	1751	1 same 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2007/09/24 09:56
L4	761348	inorganic	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2007/09/24 09:57
L5	532	1 near5 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2007/09/24 09:57
L6	41	5 same 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2007/09/24 10:10
L7	3	"7211352"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2007/09/24 10:11
L8	13	"6645675"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	OFF	2007/09/24 10:12

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                 BI OR 108-32-7/BI OR 109-94-4/BI OR 109-99-9/BI OR
                 110-71-4/BI OR 12003-67-7/BI OR 1344-28-1/BI OR 13463-67-7/
                 BI OR 14283-07-9/BI OR 14807-96-6/BI OR 21324-40-3/BI OR
                 24937-79-9/BI OR 25014-41-9/BI OR 25322-68-3/BI OR
                 25322-69-4/BI OR 28960-88-5/BI OR 33454-82-9/BI OR
                 616-38-6/BI OR 623-53-0/BI OR 67-64-1/BI OR 67-68-5/BI OR
                 68-12-2/BI OR 7631-86-9/BI OR 7791-03-9/BI OR 872-50-4/BI
                 OR 9002-84-0/BI OR 9002-86-2/BI OR 9002-88-4/BI OR
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                 I OR 9003-42-3/BI OR 9003-49-0/BI OR 9003-63-8/BI OR
                 9004-34-6/BI OR 90076-65-6/BI OR 9011-14-7/BI OR 9011-17-0/
                 BI OR 96-47-9/BI OR 96-48-0/BI OR 96-49-1/BI)
L3             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9002-86-2/RN
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L6             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9004-34-6/RN
L7             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9011-17-0/RN
L8             1 SEA FILE=REGISTRY ABB=ON  PLU=ON  25014-41-9/RN
L9            21 SEA FILE=REGISTRY ABB=ON  PLU=ON  POLYIMIDE?/CN
L10            6 SEA FILE=REGISTRY ABB=ON  PLU=ON  POLYSULFONE?/CN
L11           34 SEA FILE=REGISTRY ABB=ON  PLU=ON  POLYURETHANE?/CN
L12            2 SEA FILE=REGISTRY ABB=ON  PLU=ON  NYLON/CN
L13            8 SEA FILE=REGISTRY ABB=ON  PLU=ON  L2 AND 1-100/F
L14            4 SEA FILE=REGISTRY ABB=ON  PLU=ON  L13 AND PMS/CI
L16            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  SILICA/CN
L17            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  TALC/CN
L18            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  ALUMINA/CN
L19            2 SEA FILE=REGISTRY ABB=ON  PLU=ON  "TITANIUM OXIDE"/CN
L20           98 SEA FILE=REGISTRY ABB=ON  PLU=ON  ZEOLITE?/CN
L21            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  L2 AND  AL O2 . LI/MF
L22          104 SEA FILE=REGISTRY ABB=ON  PLU=ON  (L16 OR L17 OR L18 OR
                 L19 OR L20 OR L21)
L23           69 SEA FILE=REGISTRY ABB=ON  PLU=ON  (L3 OR L4 OR L5 OR L6 OR
                 L7 OR L8 OR L9 OR L10 OR L11 OR L12)
L24           72 SEA FILE=REGISTRY ABB=ON  PLU=ON  L23 OR L14
L25              QUE  ABB=ON  PLU=ON  L24
L26        83462 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "POLYMER MORPHOLOGY"+PFT,N
                 T,OLD,NEW/CT
L27         9511 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "BATTERY ELECTROLYTES"+PFT
                 ,NT,OLD,NEW/CT
L28       728541 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L22
L29        38363 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L28
L30          773 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29 AND L26
L32          187 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29 AND L27
L33              QUE  ABB=ON  PLU=ON  FILM# OR LAMIN? OR THINFILM? OR LAYE
                 R? OR OVERLAY? OR OVERLAID? OR LAMEL? OR MULTILAYER? OR S
                 HEET?
L34           96 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND L33
L35           95 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L34 AND ELECTROCHEM?/SC,SX

L36           26 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND POROUS?
L37        52918 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "POROUS MATERIALS"+PFT,NT,
                 OLD,NEW/CT
L38            2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND L37
L39            5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30 AND ELECTROCHEM?/SC,SX

L40       140211 SEA FILE=HCAPLUS ABB=ON  PLU=ON  COMPOSITES+PFT,NT,OLD,NEW/
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L41          87 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40 AND L30
L42          17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND L40
L43           2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 AND BATTER?
L44           2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 AND (BATTER? OR
                CATHOD? OR ANOD? OR ELECTROD?)
L45          45 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 OR L38 OR L39 OR L42
                OR L43 OR L44
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L45 ANSWER 1 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:728889 HCAPLUS Full-text
DOCUMENT NUMBER: 147:147114
TITLE: Composite solid electrolyte for protection of active metal anodes
INVENTOR(S): Visco, Steven J.; De Jonghe, Lutgard C.; Nimon, Yevgeniy S.
PATENT ASSIGNEE(S): Polyplus Battery Company, USA
SOURCE: PCT Int. Appl., 77pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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     PATENT NO.          KIND   DATE       APPLICATION NO.         DATE
     ---------------     ----   --------   --------------------    --------
     WO 2007075867        A2    20070705   WO 2006-US48755         20061219
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
             CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
             GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE,
             KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY,
             MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM,
             PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV,
             SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,
             IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
             TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
             ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
     US 2007172739        A1    20070726   US 2006-612741          20061219
PRIORITY APPLN. INFO.:                     US 2005-752255P      P  20051219
```

ED Entered STN: 06 Jul 2007

AB This composite solid electrolyte consists of a monolithic solid electrolyte base - a continuous matrix of an inorg. active metal ion conductor - and a filler component used to exclude through-porosity in the solid electrolyte. In this way a solid electrolyte produced by any process that yields residual through-porosity can be modified by the incorporation of a filler to form an impervious composite solid electrolyte by eliminating through-porosity in the base component. Methods of making the composites are described. The composites are useful in electrochem. cells such as batteries and protected active metal anodes, particularly Li anodes, that can be protected with a protective membrane incorporating the composite solid electrolyte. This protection prevents the active metal of the anode from reacting with the environment on the cathode side of the anode, which may include aqueous, air and organic liquid electrolytes and/or electrochem. active materials.

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses

(filler; in composite solid electrolytes for protection of active metal anodes in batteries)

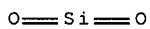
RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



IT **9011-17-0 24937-79-9**, PVdF **25014-41-9**, PAN

(gelling agent; in anolyte with protection of active metal anodes in batteries)

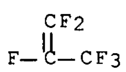
RN 9011-17-0 HCAPLUS

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

CM 1

CRN 116-15-4

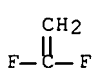
CMF C3 F6



CM 2

CRN 75-38-7

CMF C2 H2 F2



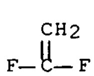
RN 24937-79-9 HCAPLUS

CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-38-7

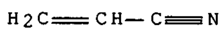
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



IT **9002-84-0**, Polytetrafluoroethylene **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene
(in composite solid electrolytes for protection of active metal anodes in batteries)
RN 9002-84-0 HCAPLUS
CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

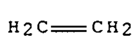
CM 1

CRN 116-14-3
CMF C2 F4

RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4



RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

$H_3C-CH=CH_2$

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT Battery anodes
Battery electrolytes
Composites
Polymer electrolytes
Solid electrolytes
(composite solid electrolytes for protection of active metal anodes in batteries)
IT 1306-38-3, Cerium oxide (CeO_2), uses 1314-23-4, Zirconium oxide (ZrO_2), uses **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses 12004-39-6, Aluminum titanium oxide (Al_2TiO_5)
(filler; in composite solid electrolytes for protection of active metal anodes in batteries)
IT **9011-17-0** **24937-79-9**, PVdF **25014-41-9**, PAN
(gelling agent; in anolyte with protection of active metal anodes in batteries)
IT 7440-23-5, Sodium, uses **9002-84-0**, Polytetrafluoroethylene **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene 9003-27-4, Polyisobutylene 25322-68-3D, PEO, cross-linked 61179-11-1, Lanthanum lithium titanium oxide 89072-99-1, Nasiglas 273943-45-6 882691-94-3, Chromium hafnium lithium phosphate 882691-95-4, Hafnium indium lithium phosphate 882691-96-5, Hafnium iron lithium phosphate 882691-97-6, Hafnium lithium tantalum phosphate 882691-98-7, Hafnium lithium scandium phosphate 882691-99-8, Hafnium lithium lutetium phosphate 882692-00-4, Hafnium lithium yttrium phosphate 937242-60-9, Lanthanum lithium titanium oxide ($La_{0.7}Li_{0.3}TiO_3$) 943436-14-4 943436-15-5 943436-16-6 943436-17-7 943436-18-8 943436-19-9 943436-20-2 943436-21-3 943436-22-4 943436-23-5 943436-24-6
(in composite solid electrolytes for protection of active metal anodes in batteries)

L45 ANSWER 2 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:499460 HCAPLUS Full-text
DOCUMENT NUMBER: 147:119187
TITLE: Investigation of mechanical properties of poly(vinyl chloride)-poly(ethylene oxide) (PVC-PEO) based polymer electrolytes for lithium polymer cells
AUTHOR(S): Ramesh, S.; Winie, Tan; Arof, A. K.
CORPORATE SOURCE: Faculty of Engineering and Science, Universiti Tunku Abdul Rahman, Kuala Lumpur, 53300, Malay.
SOURCE: European Polymer Journal (2007), 43(5), 1963-1968
CODEN: EUPJAG; ISSN: 0014-3057
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 08 May 2007
AB Polymer electrolytes composed of a blend of poly(vinyl chloride)-poly(ethylene oxide) (PVC-PEO) as a host polymer, lithium triflate ($LiCF_3SO_3$) as a salt, mixture of ethylene carbonate (EC) and di-Bu phthalate (DBP) as plasticizers and silica (SiO_2) as the nanocomposite filler were studied. Results suggest that PVC-PEO blending exhibits improved mech. strength compared to that of pure PEO. The introduction of $LiCF_3SO_3$ changes the mech. properties of PVC-PEO blends from hard and brittle to soft and tough. In PVC-PEO:$LiCF_3SO_3$

(70:30) system, the Young's modulus value decreases from 5.30 + 10-1 MPa to 4.78 + 10-4 MPa and the elongation at peak value increases from 3.71 mm to 32.09 mm with the incorporation of DBP and EC. The deteriorated mech. properties with the addition of plasticizers are overcome with the addition of SiO2 as nanocomposite filler. In PVC-PEO-LiCF3SO3-DBP-EC system, the addition of 5% SiO2 increases the Young's modulus value from 4.78 + 10-4 MPa to 1.51 + 10-3 MPa. The improvement of the mech. properties reveals greater dispersion of SiO2 particles in PVC-PEO blend based polymer electrolytes. In practical lithium polymer cells, inorg. fillers are frequently added to improve the mech. strength of the electrolyte films.

IT **7631-86-9**, Silica, uses
(mech. properties of PVC-poly(ethylene oxide) solid electrolytes for lithium polymer cells)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

O═Si═O

IT **9002-86-2**, Poly(vinyl chloride)
(mech. properties of PVC-poly(ethylene oxide) solid electrolytes for lithium polymer cells)
RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-01-4
CMF C2 H3 Cl

H_2C═CH—Cl

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 52
IT **Battery electrolytes**
Elongation, mechanical
Nanocomposites
Plasticizers
Polymer electrolytes
Stress-strain relationship
Young's modulus
(mech. properties of PVC-poly(ethylene oxide) solid electrolytes for lithium polymer cells)
IT **7631-86-9**, Silica, uses
(mech. properties of PVC-poly(ethylene oxide) solid electrolytes for lithium polymer cells)
IT **9002-86-2**, Poly(vinyl chloride)
(mech. properties of PVC-poly(ethylene oxide) solid electrolytes for lithium polymer cells)
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 3 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1324399 HCAPLUS Full-text
DOCUMENT NUMBER: 146:207135
TITLE: Composite Particles of Polyethylene @ Silica
AUTHOR(S): Sertchook, Hanan; Elimelech, Hila; Makarov, Carina; Khalfin, Rafail; Cohen, Yachin; Shuster, Michael; Babonneau, Florence; Avnir, David
CORPORATE SOURCE: Institute of Chemistry, The Hebrew University of Jerusalem, Jerusalem, 91904, Israel
SOURCE: Journal of the American Chemical Society (2007), 129(1), 98-108
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 19 Dec 2006
AB Polyethylene (PE) and silica are perhaps the simplest and most common organic and inorg. polymers, resp. We describe, for the first time, a phys. interpenetrating nanocomposite between these two elementary polymers. While polymer-silica composites are well known, the nanometric phys. blending of PE and silica has remained a challenge. A method for the preparation of such materials, which is based on the entrapment of dissolved PE in a polymerizing tetraethoxysilane (TEOS) system, was developed. Specifically, the preparation of submicron particles of low-d. PE@silica and high-d. PE@silica is detailed, which is based on carrying out a silica sol-gel polycondensation process within emulsion droplets of TEOS dissolved PE, at elevated temps. The key to the successful preparation of this new composite was the identification of a surfactant, PE-b-PEG, that is capable of stabilizing the emulsion and promoting the dissoln. of the PE. A mechanism for the formation of the particles and their inner structure are proposed, based on a large **battery** of analyses, including TEM (TEM) and scanning electron microscopies (SEM), surface area and porosity analyses, various thermal analyses including thermal gravimetric anal. (TGA/DTA) and differential scanning calorimetry (DSC) measurements, small-angle x-ray scattering (SAXS) measurements and solid-state NMR spectroscopy.
IT **9002-88-4**, LDPE
(or HDPE; preparation of phys. interpenetrating nanocomposite from polyethylene and silica)
RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

IT **7631-86-9P**, Silica, preparation
(preparation of phys. interpenetrating nanocomposite from polyethylene and silica)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

O=Si=O

CC 37-6 (Plastics Manufacture and Processing)

IT Crystallinity
Particle size
Polymer morphology
Porosity
Surface area
(of phys. interpenetrating nanocomposite from polyethylene and silica)

IT **Nanocomposites**
Particles
Penetrating agents
Permeation
Surfactants
(preparation of phys. interpenetrating nanocomposite from polyethylene and silica)

IT **9002-88-4**, LDPE
(or HDPE; preparation of phys. interpenetrating nanocomposite from polyethylene and silica)

IT **7631-86-9P**, Silica, preparation
(preparation of phys. interpenetrating nanocomposite from polyethylene and silica)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

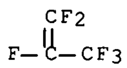
L45 ANSWER 4 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1147753 HCAPLUS Full-text
DOCUMENT NUMBER: 146:465120
TITLE: Compatibility of a novel composite microporous polymer electrolyte with anode of Li-ion batteries
AUTHOR(S): Chen, Zuo-Feng; Jiang, Yan-Xia; Xu, Jin-Mei; Zhuang, Quan-Chan; Huang, Ling; Dong, Quan-Feng; Sun, Shi-Gang
CORPORATE SOURCE: State Key Lab Phys. Chem. Solid Surfaces, Dept. Chem., Coll. Chem. Chem. Eng., Xiamen Univ., Xiamen, 361005, Peop. Rep. China
SOURCE: Gaodeng Xuexiao Huaxue Xuebao (2006), 27(10), 1937-1940
CODEN: KTHPDM; ISSN: 0251-0790
PUBLISHER: Gaodeng Jiaoyu Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
ED Entered STN: 02 Nov 2006

AB This novel composite microporous polymer electrolyte, SBA-15 CMPE, is made of poly(vinylidene fluoride-co-hexafluoropropylene) (PVdF-HFP) and mesoporous SBA-15. Electrochem. impedance spectroscopy, cyclic voltammetry, constant current polarization was used to study the effects of the storage time on the Li/SBA-15 CMPE interface properties. The polymer **film** composite integrative electrode, MCMB/SBA-15 CMPE, was prepared through a process that the membrane solution was cast directly on the mesocarbon microbead (MCMB) electrode with H2O-solubility bond. The result of CV shows that a model cell with 3-electrode based on the MCMB/SBA-15 CMPE displayed a good cyclical performance. EIS showed the process of formation, growth and stabilization of solid electrolyte interphase (SEI) **film** on MCMB/SBA-15 CMPE electrode during the 1st cathodic polarization.

IT **9011-17-0**
(PVdF-HFP, composite with SBA-15; compatibility of novel composite microporous polymer electrolyte with anodes of Li-ion batteries)
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

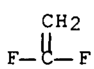
CM 1

CRN 116-15-4
CMF C3 F6

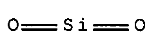


CM 2

CRN 75-38-7
CMF C2 H2 F2



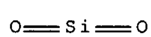
IT **7631-86-9**, SBA-15, uses
(mesoporous, composite with PVdF-HFP; compatibility of novel composite microporous polymer electrolyte with anodes of Li-ion batteries)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
IT **Battery electrolytes**
Polymer electrolytes
(compatibility of novel composite microporous polymer electrolyte with anodes of Li-ion batteries)
IT **Porous materials**
(microporous; compatibility of novel composite microporous polymer electrolyte with anodes of Li-ion batteries)
IT **9011-17-0**
(PVdF-HFP, composite with SBA-15; compatibility of novel composite microporous polymer electrolyte with anodes of Li-ion batteries)
IT **7631-86-9**, SBA-15, uses
(mesoporous, composite with PVdF-HFP; compatibility of novel

composite microporous polymer electrolyte with anodes of Li-ion batteries)

L45 ANSWER 5 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1073951 HCAPLUS Full-text
DOCUMENT NUMBER: 147:215487
TITLE: Nafion/PTFE/silicate composite membranes for direct methanol fuel cells
AUTHOR(S): Huang, Li-Ning; Chen, Li-Chun; Yu, T. Leon; Lin, Hsiu-Li
CORPORATE SOURCE: Department of Chemical Engineering & Materials Science, Yuan Ze University, Taoyuan, 32026, Taiwan
SOURCE: Journal of Power Sources (2006), 161(2), 1096-1105
CODEN: JPSODZ; ISSN: 0378-7753
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 16 Oct 2006
AB Poly(tetrafluoro ethylene) (PTFE)/Nafion composite membranes (PN composite membranes) were prepared by impregnating micro-porous PTFE membranes in Nafion/2-propanol/water solns. The PN composite membranes were then further impregnated with tetraethoxysilane (TEOS) solns. to prepare PTFE/Nafion/silicate (PNS) composite membranes. The influence of hybridizing silicate into the PN membranes on their direct methanol fuel cell (DMFC) performance and methanol crossover was studied. Silicate in PN membranes causes reduction both in proton conductivity and methanol crossover of membranes. Thus PNS had a higher voltage than PN at low current densities due to the lower methanol crossover of PNS. However, at high current densities, PNS had a lower voltage than PN due to the higher resistance to proton transference of PNS. The range of lower current densities where PNS had a higher voltage than PN was i = 0-120 mA-cm-2 when the methanol feed concentration was 2 M. This lower c.d. range became broader as the methanol feed concentration was increased, and it was broadened to i = 0-190 mA-cm-2 as the methanol feed concentration was increased to 5 M. A comparison of the methanol crossover on the DMFC performance of PN and PNS with Nafion-112 was also studied. Nafion-112 exhibits higher methanol electroosmosis than PN and PNS. Thus at a high c.d., the higher methanol crossover via electroosmosis caused Nafion-112 to have a lower voltage than PN and PNS.
IT **7631-86-9P**, Silica, uses
(composites with Nafion and PTFE; Nafion/PTFE/silicate composite membranes for direct methanol fuel cells)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



IT **9002-84-0**, Poly(tetrafluoro ethylene)
(composites with Nafion and optionally silica; Nafion/PTFE/silicate composite membranes for direct methanol fuel cells)
RN 9002-84-0 HCAPLUS
CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 116-14-3

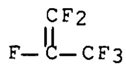
CMF C2 F4

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
IT **Interpenetrating polymer networks**
(Nafion/PTFE composite; Nafion/PTFE/silicate composite membranes for direct methanol fuel cells)
IT **7631-86-9P**, Silica, uses
(composites with Nafion and PTFE; Nafion/PTFE/silicate composite membranes for direct methanol fuel cells)
IT **9002-84-0**, Poly(tetrafluoro ethylene)
(composites with Nafion and optionally silica; Nafion/PTFE/silicate composite membranes for direct methanol fuel cells)
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 6 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:927538 HCAPLUS Full-text
DOCUMENT NUMBER: 146:166050
TITLE: Laser printing of nanocomposite solid-state electrolyte membranes for Li micro-batteries
AUTHOR(S): Ollinger, M.; Kim, H.; Sutto, T.; Pique, A.
CORPORATE SOURCE: Materials Science & Technology Division, Naval Research Laboratory, Washington, DC, 20375, USA
SOURCE: Applied Surface Science (2006), 252(23), 8212-8216
CODEN: ASUSEE; ISSN: 0169-4332
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 11 Sep 2006
AB Nanocomposite solid-state electrolyte membranes were deposited, using a laser direct-write technique, from a suspension of an ionic liquid (1,2-dimethyl-3-n-butylimidazolium-bis-trifluoromethanesulfonylimide)/ polymer (poly(vinylidene fluoride-co-hexafluoropropylene)) matrix with dispersed TiO_2 nano-particles. The electrochem. and mech. properties of the membranes are reported and discussed. These membranes show good electrochem. behavior for ionic liqs. while maintaining the strength and flexibility of the polymer matrix. This combination of phys. properties and deposition technique makes these deposited nanocomposite membranes suitable for use as an electrolyte/separator in Li micro-batteries. Sample Li micro-batteries using these laser printed nanocomposite membranes were fabricated and their charge/discharge behavior tested, demonstrating the feasibility of using these nanocomposite membranes in Li micro-battery applications.
IT **9011-17-0**, Hexafluoropropylene vinylidene fluoride copolymer
(PVdF-HFP, polymer matrix with DMBITFSI, nanocomposite with titania; laser printing of nanocomposite solid-state electrolyte membranes for Li micro-batteries)
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

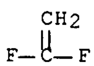
CM 1

CRN 116-15-4
CMF C3 F6

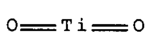


CM 2

CRN 75-38-7
CMF C2 H2 F2



IT **13463-67-7**, Titanium oxide (TiO2), uses
(nanocomposite with polymer matrix; laser printing of nanocomposite solid-state electrolyte membranes for Li micro-batteries)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Laser printers
Nanocomposites
Secondary battery separators
Solid electrolytes
(laser printing of nanocomposite solid-state electrolyte membranes for Li micro-batteries)
IT **9011-17-0**, Hexafluoropropylene vinylidene fluoride copolymer
(PVdF-HFP, polymer matrix with DMBITFSI, nanocomposite with titania; laser printing of nanocomposite solid-state electrolyte membranes for Li micro-batteries)
IT **13463-67-7**, Titanium oxide (TiO2), uses
(nanocomposite with polymer matrix; laser printing of nanocomposite solid-state electrolyte membranes for Li micro-batteries)
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 7 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:734545 HCAPLUS Full-text
DOCUMENT NUMBER: 145:191969

TITLE: Bilayer electrolyte for a lithium battery
INVENTOR(S): Deschamps, Marc
PATENT ASSIGNEE(S): Batscap, Fr.
SOURCE: PCT Int. Appl., 15 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006077325	A2	20060727	WO 2006-FR125	20060119
WO 2006077325	A3	20070705		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2881275	A1	20060728	FR 2005-715	20050124
FR 2881275	B1	20070427		

PRIORITY APPLN. INFO.: FR 2005-715 A 20050124

ED Entered STN: 27 Jul 2006

AB The invention relates to a bilayer polymer electrolyte for a lithium battery. The inventive electrolyte comprises N and P layers which are each formed by a solid solution of an Li salt in a polymer material, said Li salt being the same in both layers, whereby the concentration of polymer material is at least 60% by weight and the concentration of lithium salt is 5-25% by weight The polymer material from layer P contains a solvating polymer and a non-solvating polymer, the weight ratio between the two polymers being such that the solvating polymer forms a continuous network. The polymer material from layer N is formed by a solvating polymer and, optionally, a non-solvating polymer, the weight ratio between the two polymers being such that the solvating polymer forms a continuous network and the non-solvating polymer does not form a continuous network.

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
13463-67-7, Titania, uses
(bilayer electrolyte for lithium battery)

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

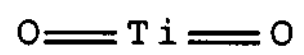
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

O═Si═O

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (CA INDEX NAME)



IT **9002-84-0**, Poly(tetrafluoroethene) **9002-86-2**,
Polyvinyl chloride
(bilayer electrolyte for lithium battery)
RN 9002-84-0 HCAPLUS
CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

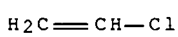
CM 1

CRN 116-14-3
CMF C2 F4

RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

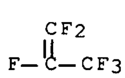
CRN 75-01-4
CMF C2 H3 Cl



IT **9011-17-0**, Hexafluoropropene-vinylidene difluoride copolymer
24937-79-9, Polyvinylidene difluoride
(composite with magnesium oxide and lithium salt and POE; bilayer electrolyte for lithium battery)
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene
(CA INDEX NAME)

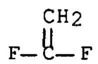
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

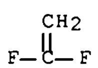
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Extrusion of plastics and rubbers
Fillers
Films
Phase separation
Polymer electrolytes
(bilayer electrolyte for lithium battery)
IT **Laminated materials**
(bilayer electrolyte structure; bilayer electrolyte for lithium battery)
IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
12047-27-7, Barium titanate (BaTiO3), uses **13463-67-7**,
Titania, uses
(bilayer electrolyte for lithium battery)
IT 75-01-4D, Vinyl chloride, copolymers containing 75-35-4D, copolymers containing 75-38-7D, Vinylidene difluoride, copolymers containing 75-56-9D, Propylene oxide, copolymers containing, lithium ion complexes 79-38-9D, Chlorotrifluoroethene, copolymers containing 106-89-8D, Epichlorohydrin, copolymers containing, lithium ion complexes 106-92-3D, Allylglycidyl ether, copolymers containing, lithium ion complexes 116-14-3D, Tetrafluoroethene, copolymers containing 9002-81-7D, Poly(oxymethylene), lithium ion complexes 9002-83-9, Poly(chlorotrifluoroethene) **9002-84-0**, Poly(tetrafluoroethene) 9002-85-1, Poly(vinylidene dichloride) **9002-86-2**, Polyvinyl chloride 24969-06-0D, Poly(epichlorohydrin), lithium ion complexes 25322-69-4D, Polypropylene oxide, lithium ion complexes 25639-25-2D, Poly(allylglycidyl ether), lithium ion complexes
(bilayer electrolyte for lithium battery)

IT 9011-17-0, Hexafluoropropene-vinylidene difluoride copolymer
24937-79-9, Polyvinylidene difluoride
(composite with magnesium oxide and lithium salt and POE; bilayer electrolyte for lithium battery)

L45 ANSWER 8 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:170312 HCAPLUS Full-text
DOCUMENT NUMBER: 144:216134
TITLE: Nonaqueous electrolyte battery
INVENTOR(S): Okamoto, Tomohito
PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan; Sanyo Gs Soft Energy Co., Ltd.
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2006040184	A1	20060223	US 2005-201684		20050810
JP 2006059635	A	20060302	JP 2004-239328		20040819
CN 1738094	A	20060222	CN 2005-10092668		20050819
PRIORITY APPLN. INFO.:			JP 2004-239328	A	20040819

ED Entered STN: 24 Feb 2006

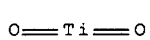
AB In the nonaq. electrolyte battery comprising a pos. electrode, a neg. electrode and a polymer electrolyte **layer**, the theor. capacity per unit area of the opposed pos. electrode and neg. electrode was set to larger than or equal to 3.00 mA-h/cm2 and smaller than or equal to 3.20 mA-h/cm2, the polymer electrolyte **layer** was formed as a **porous layer** including inorg. solid filler and the theor. battery capacity was set to larger than or equal to 800 mA-h and smaller than or equal to 4 A-h.

IT **1344-28-1**, Alumina, uses **13463-67-7**, Titania, uses
24937-79-9, PVDF
(nonaq. electrolyte battery)

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

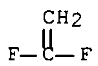
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (CA INDEX NAME)



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



INCL 429306000; 429231100; 429231800
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Polymer electrolytes
Secondary batteries
(nonaq. electrolyte battery)
IT **1344-28-1**, Alumina, uses **13463-67-7**, Titania, uses **24937-79-9**, PVDF
(nonaq. electrolyte battery)

L45 ANSWER 9 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:985255 HCAPLUS Full-text
DOCUMENT NUMBER: 143:289426
TITLE: Method of fabrication of lithium cationic single-ion conducting inorganic filler-containing composite polymer electrolyte for lithium secondary battery
INVENTOR(S): Lee, Young Gi; Kim, Kwang Man; Ryu, Kwang Sun; Chang, Soon Ho
PATENT ASSIGNEE(S): S. Korea
SOURCE: U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S. Ser. No. 750,152.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005196677	A1	20050908	US 2005-97730		20050401
US 2004214089	A1	20041028	US 2003-750152		20031230
US 7211352	B2	20070501			
KR 2005103068	A	20051027	KR 2004-28470		20040424
EP 1598896	A1	20051123	EP 2005-251844		20050324
EP 1598896	B1	20070502			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, BA, HR, IS, YU					
AT 361553	T	20070515	AT 2005-251844		20050324
JP 2005310795	A	20051104	JP 2005-125449		20050422
PRIORITY APPLN. INFO.:			US 2003-750152	A2	20031230
			KR 2004-28470	A	20040424
			KR 2003-26420	A	20030425

ED Entered STN: 09 Sep 2005
AB Provided are a composite polymer electrolyte for a lithium secondary battery in which a composite polymer matrix multi-**layer** structure composed of a plurality of polymer matrixes with different pore sizes is impregnated with an electrolyte solution, and a method of manufacturing the same. Among the

polymer matrixes, a microporous polymer matrix with a smaller pore size contains a lithium cationic single-ion conducting inorg. filler, thereby enhancing ionic conductivity, the distribution uniformity of the impregnated electrolyte solution, and maintenance characteristics. The microporous polymer matrix containing the lithium cationic single-ion conducting inorg. filler is coated on a surface of a **porous** polymer matrix to form the composite polymer matrix multi-**layer** structure, which is then impregnated with the electrolyte solution, to manufacture the composite polymer electrolyte. The composite polymer electrolyte is used in a unit battery. The composite polymer matrix structure can increase mech. properties. The introduction of the lithium cationic single-ion conducting inorg. filler can provide excellent ionic conductivity and high rate discharge characteristics.

IT **9002-84-0**, Ptfe **9002-86-2**, Pvc **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene **9004-34-6**, Cellulose, uses **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile **28960-88-5**, Trifluoroethylene-vinylidene fluoride copolymer

(method of fabrication of lithium cationic single-ion conducting inorg. filler-containing composite polymer electrolyte for lithium secondary battery)

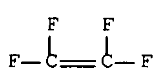
RN 9002-84-0 HCAPLUS

CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 116-14-3

CMF C2 F4



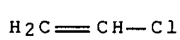
RN 9002-86-2 HCAPLUS

CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl



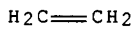
RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1

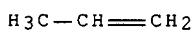
CMF C2 H4



RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

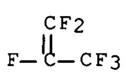


RN 9004-34-6 HCAPLUS
CN Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

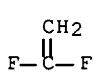
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

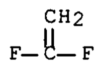
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

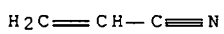
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

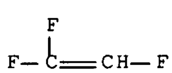
CRN 107-13-1
CMF C3 H3 N



RN 28960-88-5 HCAPLUS
CN Ethene, 1,1,2-trifluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

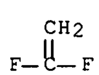
CM 1

CRN 359-11-5
CMF C2 H F3



CM 2

CRN 75-38-7
CMF C2 H2 F2



IT **7631-86-9D**, Silica, sulfonated, lithium salt
(method of fabrication of lithium cationic single-ion conducting inorg. filler-containing composite polymer electrolyte for lithium secondary battery)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

O=Si=O

IC ICM H01M010-40
ICS H01M002-16
INCL 429309000; 429307000; 429251000; 429252000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Ionic conductors
Polymer electrolytes
(method of fabrication of lithium cationic single-ion conducting inorg. filler-containing composite polymer electrolyte for lithium secondary battery)
IT **Composites**
(polymer electrolyte; method of fabrication of lithium cationic single-ion conducting inorg. filler-containing composite polymer electrolyte for lithium secondary battery)
IT 75-77-4D, Chlorotrimethylsilane, reaction products with chlorosufonated silica, lithium salts 96-47-9, 2-Methyltetrahydrofuran 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 107-31-3, Methyl formate 108-32-7, Propylene carbonate 109-94-4, Ethyl formate 109-99-9, Thf, uses 110-71-4 616-38-6, Dimethyl carbonate 623-53-0, Methyl ethyl carbonate 7791-03-9, Lithium perchlorate **9002-84-0**, Ptfe **9002-86-2**, Pvc **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene 9003-20-7, Polyvinyl acetate 9003-21-8, Polymethylacrylate 9003-32-1, Polyethylacrylate 9003-42-3, Polyethylmethacrylate 9003-49-0, Polybutylacrylate 9003-63-8, Polybutylmethacrylate **9004-34-6**, Cellulose, uses 9011-14-7, Pmma **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25684-76-8, Tetrafluoroethylene-vinylidene fluoride copolymer **28960-88-5**, Trifluoroethylene-vinylidene fluoride copolymer 33454-82-9, Lithium triflate 90076-65-6 162684-16-4, Lithium manganese nickel oxide
(method of fabrication of lithium cationic single-ion conducting inorg. filler-containing composite polymer electrolyte for lithium secondary battery)
IT **7631-86-9D**, Silica, sulfonated, lithium salt
(method of fabrication of lithium cationic single-ion conducting inorg. filler-containing composite polymer electrolyte for lithium secondary battery)

L45 ANSWER 10 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:983911 HCAPLUS Full-text
DOCUMENT NUMBER: 143:289420
TITLE: Secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte
INVENTOR(S): Kwak, Seung-Yeop; Jeon, Jae-Deok
PATENT ASSIGNEE(S): Seoul National University Industry Foundation, S. Korea
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2

```
DOCUMENT TYPE:          Patent
LANGUAGE:               English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
     WO 2005081646        A2    20050909    WO 2005-KR525          20050226
     WO 2005081646        A3    20060202
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
             CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
             GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,
             KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
             MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,
             SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
             VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
             DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC,
             NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA,
             GN, GQ, GW, ML, MR, NE, SN, TD, TG
     KR 2005087263        A     20050831    KR 2004-12983          20040226
PRIORITY APPLN. INFO.:                      KR 2004-12983       A  20040226
```

ED   Entered STN: 09 Sep 2005

AB   Provided are a solvent-free polymer electrolyte and a secondary battery employing the same. The solvent-free polymer electrolyte includes: a **porous film** including a first polymer and a second oligomer, the first polymer being at least one selected from the group consisting of poly(vinylidene fluoride-co- hexafluoropropylene) copolymers, polyvinylidenefluorides, polymethylmethacrylates, polyacrylonitriles, polyethyleneoxides, and celluloses having a polyether chain and the second oligomer being at least one selected from the group consisting of poly(ethylene oxide-co-ethylene carbonate) copolymers with at least one terminal groups substituted by a halogen atom and polyethyleneglycols with at least one terminal groups substituted by a halogen atom; and an electrolyte present in the pores of the **porous film** and including the second oligomer and a lithium salt. Since the solvent-free polymer electrolyte contains no liquid organic electrolyte, it is not accompanied by problems caused by leakage or evaporation of an organic solvent, unlike a gel-type polymer electrolyte. Furthermore, the solvent-free polymer electrolyte has enhanced ionic conductivity as compared to a conventional solvent-free polymer electrolyte.

IT   **9004-34-6**, Cellulose, uses **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile
       (secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)

RN   9004-34-6 HCAPLUS

CN   Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

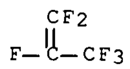
RN   9011-17-0 HCAPLUS

CN   1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

CM   1

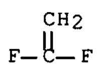
CRN 116-15-4

CMF C3 F6



CM 2

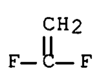
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

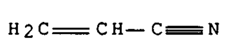
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

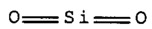
CRN 107-13-1
CMF C3 H3 N



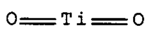
IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
13463-67-7, Titania, uses
(secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Polyoxyalkylenes, uses
(halogenated; secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)
IT Fillers
(inorg.; secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)
IT Battery anodes
Battery electrolytes
Polymer electrolytes
Secondary batteries
(secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)
IT Carbonaceous materials (technological products)
Fluoropolymers, uses
Oligomers
(secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)
IT Zeolites (synthetic), uses
(secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)
IT 7439-93-2D, Lithium, intercalation compound 7791-03-9, Lithium perchlorate **9004-34-6**, Cellulose, uses 9011-14-7, Pmma **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer 12017-96-8, Chromium lithium oxide (CrLiO2) 12031-65-1, Lithium nickel oxide (LiNiO2) 12057-17-9, Lithium manganese oxide (LiMn2O4) 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide (CoLiO2) 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile 25322-68-3, Peo 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 90076-65-6 106818-19-3D, Ethylene carbonate-ethylene oxide copolymer, halogenated 131651-65-5 132843-44-8
(secondary battery using **porous film** type

solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)

IT 25608-11-1DP, chloride terminated
(secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses **13463-67-7**, Titania, uses
(secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)

IT 37220-89-6, Lithium aluminate
(γ-; secondary battery using **porous film** type solvent-free polymer electrolyte filled with oligomer/prepolymer electrolyte)

L45 ANSWER 11 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:735154 HCAPLUS Full-text
DOCUMENT NUMBER: 143:196855
TITLE: Protected active metal electrode and battery cell structures with nonaqueous interlayer architecture
INVENTOR(S): Visco, Steven J.; Katz, Bruce D.; Nimon, Yevgeniy S.; De Jonghe, Lutgard C.
PATENT ASSIGNEE(S): Polyplus Battery Company, USA
SOURCE: U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005175894	A1	20050811	US 2004-824944	20040414
AU 2004316638	A1	20050909	AU 2004-316638	20041008
CA 2555637	A1	20050909	CA 2004-2555637	20041008
WO 2005083829	A2	20050909	WO 2004-US33371	20041008
WO 2005083829	A3	20060504		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1714349	A2	20061025	EP 2004-794655	20041008

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1938895	A	20070328	CN 2004-80042697	20041008
BR 2004018500	A	20070515	BR 2004-18500	20041008
JP 2007524204	T	20070823	JP 2006-552102	20041008
MX 2006PA09007	A	20061020	MX 2006-PA9007	20060807

PRIORITY APPLN. INFO.: US 2004-542532P P 20040206

US 2004-548231P P 20040227

US 2004-824944 A 20040414

WO 2004-US33371 W 20041008

ED Entered STN: 12 Aug 2005

AB The invention concerns active metal and active metal intercalation electrode structures and battery cells having ionically conductive protective architecture including an active metal (e.g., lithium) conductive impervious **layer** separated from the electrode (anode) by a **porous** separator impregnated with a non-aqueous electrolyte (anolyte). This protective architecture prevents the active metal from deleterious reaction with the environment on the other (cathode) side of the impervious **layer**, which may include aqueous or nonaq. liquid electrolytes (catholytes) and/or a variety electrochem. active materials, including liquid, solid and gaseous oxidizers. Safety additives and designs that facilitate manufacture are also provided.

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
13463-67-7, Titania, uses
(glass ceramic; protected active metal electrode and battery cell structures with nonaq. interlayer architecture)

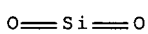
RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

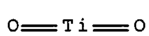
RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (CA INDEX NAME)



IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
24937-79-9, Pvdf **25014-41-9**, Polyacrylonitrile
(protected active metal electrode and battery cell structures with nonaq. interlayer architecture)

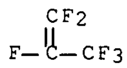
RN 9011-17-0 HCAPLUS

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

CM 1

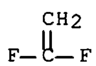
CRN 116-15-4

CMF C3 F6



CM 2

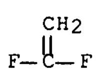
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

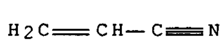
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



IC ICM H01M004-60
INCL 429212000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): **72**
IT Battery anodes
Battery electrolytes
Ceramics
Gelation agents
Glass ceramics
Ionic liquids

Oxidizing agents
Polymerization catalysts
Primary batteries
Primary battery separators
Seawater
Secondary batteries
(protected active metal electrode and battery cell structures with nonaq. interlayer architecture)

IT 1310-53-8, Germanium oxide (GeO_2), uses 1314-23-4, Zirconia, uses 1314-56-3, Phosphorus oxide (P_2O_5), uses **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses 12024-21-4, Gallium oxide (Ga_2O_3) 12057-24-8, Lithia, uses **13463-67-7**, Titania, uses
(glass ceramic; protected active metal electrode and battery cell structures with nonaq. interlayer architecture)

IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile 25322-68-3, Peo
(protected active metal electrode and battery cell structures with nonaq. interlayer architecture)

L45 ANSWER 12 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:638576 HCAPLUS Full-text
DOCUMENT NUMBER: 143:136319
TITLE: Alkaline polymer electrolyte membrane and its application
INVENTOR(S): Wang, Chen Kuei Yung; Yang, Chun-Chen; Lin, Sheng-Jen
PATENT ASSIGNEE(S): Nan Ya Plastics Corporation, Taiwan
SOURCE: U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2005158632	A1	20050721	US 2005-34256		20050113
TW 251366	B	20060311	TW 2004-93101333		20040119
CN 1560129	A	20050105	CN 2004-10008619		20040312
PRIORITY APPLN. INFO.:			TW 2004-93101333	A	20040119

ED Entered STN: 22 Jul 2005

AB The invention concerns an alkaline polymer electrolyte membrane formed by mixing hydrophilic PVA, PECH and DMSO organic solvent possessing high mech. strength and superior electrochem. stability, and with an ionic conductivity higher than 0.01 S/cm under normal temperature which may supersede the traditional PP/PE non-woven fabric separator and KOH electrolyte; in addition, the alkaline polymer electrolyte membrane shall be combined with a base material of glass fiber web, PE/PP **porous film** and Nylon **porous film** with thickness of 20 μm-800 μm to obtain a composite solid-state alkaline polymer electrolyte membrane, which may be used as a separator membrane applicable inside a Zn-air cell, a Ni-hydrogen cell, a nickel-cadmium cell, a nickel-zinc cell, a fuel cell, a metal-air cell, a primary and secondary alkaline (Zn-MnO_2) cells, and an alkaline capacitors.

IT **7631-86-9**, Silica, uses **13463-67-7**, Titania, uses
(alkaline polymer electrolyte membrane and its application)

RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

O═Si═O

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO_2) (CA INDEX NAME)

O═Ti═O

IT **9003-07-0**, Polypropylene
(alkaline polymer electrolyte membrane and its application)
RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

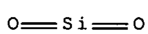
CRN 115-07-1
CMF C3 H6

$H_3C—CH═CH_2$

IC ICM H01M010-26
ICS H01M002-14; H01M006-04
INCL 429309000; 429206000; 429303000; 429317000; 429144000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
IT **Battery electrolytes**
Fuel cell separators
Ionic conductivity
Primary battery separators
Secondary batteries
Secondary battery separators
(alkaline polymer electrolyte membrane and its application)
IT **7631-86-9**, Silica, uses **13463-67-7**, Titania, uses
(alkaline polymer electrolyte membrane and its application)
IT 67-68-5, DMSO, uses 1310-58-3, Potassium hydroxide, uses
9003-07-0, Polypropylene 25322-68-3, Peo
(alkaline polymer electrolyte membrane and its application)

L45 ANSWER 13 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:74560 HCAPLUS Full-text
DOCUMENT NUMBER: 142:317474
TITLE: Ionic transport in P(VDF-HFP)-PMMA-LiCF3SO3-(PC+DEC)-SiO2 composite gel polymer electrolyte
AUTHOR(S): Saikia, D.; Kumar, A.
CORPORATE SOURCE: Department of Physics, Napaam, Tezpur University, Assam, 784028, India
SOURCE: European Polymer Journal (2005), 41(3), 563-568
CODEN: EUPJAG; ISSN: 0014-3057

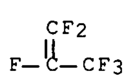
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 28 Jan 2005
AB Composite gel polymer electrolytes composed of poly(vinylidene fluoride-co-hexafluoropropylene) P(VDF-HFP) and poly(Me methacrylate) (PMMA), propylene carbonate and di-Et carbonate (PC + DEC) as plasticizer, LiCF3SO3 as electrolyte salt, and fumed silica were prepared by solvent casting technique with various plasticizer-filler ratio. Films of thickness 40-70 μm were characterized by a.c. impedance measurements at 303 K to 373 K. The presence of silica in polymer electrolyte resulted in enhancement of the ionic conductivity; maximum elec. conductivity of .apprx.1 + 10-3 S/cm at 303 K and .apprx.2.1 + 10-3 S/cm at 373 K was achieved. The FTIR spectra confirmed polymer-salt interactions. X-ray diffraction patterns evidence the increased amorphicity in the blended composite gel polymer electrolytes. Scanning electron micrographs show the dispersion of SiO2 particles in the polymer electrolyte.
IT **7631-86-9**, Silica, properties
(amorphous, fume, conductivity enhancer; effect of fumed silica on ionic conductivity of poly(VDF-HFP)-PMMA-LiCF3SO3-(PC+DEC)-SiO2 composite gel electrolyte)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
(gel electrolyte component; effect of fumed silica on ionic conductivity of poly(VDF-HFP)-PMMA-LiCF3SO3-(PC+DEC)-SiO2 composite gel electrolyte)
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

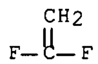
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): **72**, 76

IT **Polymer morphology**
(phase; effect of fumed silica on ionic conductivity of poly(VDF-HFP)-PMMA-LiCF3SO3-(PC+DEC)-SiO2 composite gel electrolyte)

IT **7631-86-9**, Silica, properties
(amorphous, fume, conductivity enhancer; effect of fumed silica on ionic conductivity of poly(VDF-HFP)-PMMA-LiCF3SO3-(PC+DEC)-SiO2 composite gel electrolyte)

IT 9011-14-7, Poly(methyl methacrylate) **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
(gel electrolyte component; effect of fumed silica on ionic conductivity of poly(VDF-HFP)-PMMA-LiCF3SO3-(PC+DEC)-SiO2 composite gel electrolyte)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 14 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	2004:1149408 HCAPLUS Full-text
DOCUMENT NUMBER:	142:243552
TITLE:	Solvent-Free Composite PEO-Ceramic Fiber/Mat Electrolytes for Lithium Secondary Cells
AUTHOR(S):	Wang, Chunsheng; Zhang, Xiang-Wu; Appleby, A. John
CORPORATE SOURCE:	Center for Manufacturing Research, Department of Chemical Engineering, Tennessee Technological University, Cookeville, TN, 38505, USA
SOURCE:	Journal of the Electrochemical Society (2005), 152(1), A205-A209 CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER:	Electrochemical Society
DOCUMENT TYPE:	Journal
LANGUAGE:	English

ED Entered STN: 29 Dec 2004

AB Solvent-free composite poly(ethylene oxide) (PEO)-ceramic fiber or mat electrolytes with high ionic conductivity and good interfacial stability were developed using high-ionic-conductivity La0.55Li0.35TiO3 fibers and mats. The conducting ceramic fibers can penetrate the cross section of the electrolyte film to provide long-range lithium-ion transfer channels, thus producing composite electrolytes with high conductivity A maximum room-temperature conductivity of 5.0 + 10-4 S cm-1 was achieved for 20% La0.55Li0.35TiO3 fiber in a PEO-LiN(SO2CF2CF3)2 mixture containing 12.5% Li+ in PEO. The maximum transference number obtained was 0.7. The ceramic fibers in this composite electrolyte are coated by a very thin PEO layer, which is sufficient to provide good interfacial stability with lithium-ion and lithium-metal anodes.

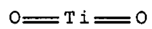
IT **9004-34-6**, Cellulose, processes
(coating on ceramic fibers prior to sintering; solvent-free composite PEO-ceramic particle and ceramic fiber/mat electrolytes for lithium secondary cells)

RN 9004-34-6 HCAPLUS

CN Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT **13463-67-7**, Titania, uses
(phase in calcined ceramic; solvent-free composite PEO-ceramic particle and ceramic fiber/mat electrolytes for lithium secondary cells)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO_2) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 57, 76
IT **Reinforced plastics**
(fiber-reinforced; solvent-free composite PEO-ceramic particle and ceramic fiber/mat electrolytes for lithium secondary cells)
IT **Battery electrolytes**
Electrode-electrolyte interface
Ionic conductivity
Transference number
(solvent-free composite PEO-ceramic particle and ceramic fiber/mat electrolytes for lithium secondary cells)
IT **9004-34-6**, Cellulose, processes
(coating on ceramic fibers prior to sintering; solvent-free composite PEO-ceramic particle and ceramic fiber/mat electrolytes for lithium secondary cells)
IT 1312-81-8, Lanthanum oxide 12057-24-8, Lithium oxide, uses
13463-67-7, Titania, uses
(phase in calcined ceramic; solvent-free composite PEO-ceramic particle and ceramic fiber/mat electrolytes for lithium secondary cells)
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 15 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:1067823 HCAPLUS Full-text
DOCUMENT NUMBER: 143:308999
TITLE: Composite polymer electrolyte with micro-**porous** structure
AUTHOR(S): Li, Zhao-Hui; Su, Guang-Yao; Gao, De-Shu; Wang, Xia-Yu; Li, Xiao-Ping
CORPORATE SOURCE: College of Chemistry, Xiangtan University, Xiangtan, 411105, Peop. Rep. China
SOURCE: Yingyong Huaxue (2004), 21(11), 1160-1164
CODEN: YIHUED; ISSN: 1000-0518
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
ED Entered STN: 14 Dec 2004
AB Microporus composite **films** comprising vinylidene fluoride-hexafluoropropne copolymer and Al_2O_3 nanoparticles were prepared by a phase inversion technol. The porosity of the composite polymer **films** with 6% (mass fraction) Al_2O_3 nanoparticles is 40% higher than that of the polymer **films** without Al_2O_3 nanoparticles. The resulting gel polymer electrolyte possesses an ionic conductivity of 1.47 x 10^{-3} S/cm and the ionic transference number of 0.72. The characteristics of the interface between the surface of lithium metal and

the polymer electrolytes, which were filled with and without AL2O3 nanoparticles, were investigated by ac impedance technol.

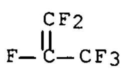
IT **9011-17-0**, Vinylidene fluoride-hexafluoropropene copolymer
(composite with alumina nanoparticles; porosity and ionic conductivity of micro-**porous films** of)

RN 9011-17-0 HCAPLUS

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

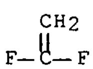
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



IT **1344-28-1**, Alumina, uses
(nanoparticles, composites with fluoropolymers; porosity and ionic conductivity of micro-**porous films** of)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST alumina nanoparticle polymer composite microporous electrolyte **film**; vinylidene fluoride hexafluoropropene copolymer alumina composite electrolyte **film**

IT Nanoparticles
(alumina, composites with fluoropolymers; porosity and ionic conductivity of micro-**porous films** of)

IT **Battery electrolytes**
(lithium battery; vinylidene fluoride-hexafluoropropene copolymer-alumina nanoparticle composite **films** as)

IT Ionic conductivity
Porosity
(of vinylidene fluoride-hexafluoropropene copolymer-alumina nanoparticle composite **films**)

IT **9011-17-0**, Vinylidene fluoride-hexafluoropropene copolymer
(composite with alumina nanoparticles; porosity and ionic conductivity of micro-**porous films** of)

IT **1344-28-1**, Alumina, uses

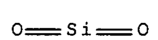
(nanoparticles, composites with fluoropolymers; porosity and ionic conductivity of micro-**porous films** of)

L45 ANSWER 16 OF 45 HCAPLUS

ACCESSION NUMBER: 2004:910322 HCAPLUS Full-text
DOCUMENT NUMBER: 142:159306
TITLE: Novel preparation of nanocomposite polymer electrolyte and its application to lithium polymer batteries
AUTHOR(S): Qiu, Wei-Li; Ma, Xiao-Hua; Yang, Qing-He; Fu, Yan-Bao; Zong, Xiang-Fu
CORPORATE SOURCE: Department of Materials Science, Fudan University, Shanghai, 200433, Peop. Rep. China
SOURCE: Journal of Power Sources (2004), 138(1-2), 245-252
CODEN: JPSODZ; ISSN: 0378-7753
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 01 Nov 2004

AB Gel nanocomposite polymer electrolyte (NCPE) was prepared by UV polymerization and thermal polymerization, resp. in the presence of liquid electrolyte with nanosize SiO2-contained poly(ethylene glycol) diacrylate (PEGDA) as the monomer. Nanosize SiO2-contained PEGDA was synthesized using aqueous colloidal silica as one of starting materials and its viscosity was very low. The partial silanol surface groups of SiO2 were modified to an acrylic group by employing of methacryloxypropyl-trimethoxysilane (MAPTMS), which made the dispersion of nanosize SiO2 in PEGDA uniform and stable. Compared with the gel polymer electrolyte (GPE) based on PEGDA without nanosize SiO2, the ionic conductivity of the gel NCPE was higher and the electrochem. stability and interfacial stability were better, whether it was prepared by UV polymerization or thermal polymerization It showed oxidation stability up to 5.0 V vs. Li/Li+ and lithium deposition/dissoln. on the stainless steel electrode highly reversible. The applicability of the gel NCPE to lithium polymer batteries was demonstrated by graphite/SPE/LiCoO2 cell, which was prepared by in situ thermal polymerization The discharge capacity was stable with charge-discharge cycling.

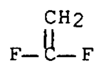
IT **7631-86-9**, Silica, reactions
(colloidal; novel preparation of nanocomposite polymer electrolyte and its application to lithium polymer batteries)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



IT **24937-79-9**, PVDF
(in composite electrode; novel preparation of nanocomposite polymer electrolyte and its application to lithium polymer batteries)
RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 38, 76

IT **Battery electrolytes**
Ceramers
Gels
Ionic conductivity
Nanocomposites
Polymer electrolytes
(novel preparation of nanocomposite polymer electrolyte and its application to lithium polymer batteries)

IT **7631-86-9**, Silica, reactions
(colloidal; novel preparation of nanocomposite polymer electrolyte and its application to lithium polymer batteries)

IT **24937-79-9**, PVDF
(in composite electrode; novel preparation of nanocomposite polymer electrolyte and its application to lithium polymer batteries)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 17 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:905472 HCAPLUS Full-text
DOCUMENT NUMBER: 141:382158
TITLE: Method of fabrication of single ion conductor-containing composite polymer electrolyte for lithium secondary battery
INVENTOR(S): Lee, Young Gi; Ryu, Kwang Sun; Chang, Soon Ho
PATENT ASSIGNEE(S): Electronics and Telecommunications Research Institute, S. Korea
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2004214089	A1	20041028	US 2003-750152		20031230
US 7211352	B2	20070501			
KR 2004092189	A	20041103	KR 2003-26420		20030425
JP 2004327423	A	20041118	JP 2003-435912		20031226
CN 1610170	A	20050427	CN 2003-10125473		20031230
US 2005196677	A1	20050908	US 2005-97730		20050401
PRIORITY APPLN. INFO.:			KR 2003-26420	A	20030425
			US 2003-750152	A2	20031230
			KR 2004-28470	A	20040424

ED Entered STN: 29 Oct 2004

AB Provided is a composite polymer electrolyte for a lithium secondary battery that includes a composite polymer matrix structure having a single ion conductor-containing polymer matrix to enhance ionic conductivity and a method

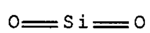
of manufacturing the same. The composite polymer electrolyte includes a first polymer matrix made of a first porous polymer with a first pore size; a second polymer matrix made of a single ion conductor, an inorg. material, and a second porous polymer with a second pore size smaller than the first pore size. The second polymer matrix is coated on a surface of the first polymer matrix. The composite polymer matrix structure can increase mech. properties. The single ion conductor-containing porous polymer matrix of a submicro-scale can enhance ionic conductivity and the charge/discharge cycle stability.

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses **9002-84-0**, Ptfe **9002-86-2**, Polyvinyl chloride **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene **9004-34-6**, Cellulose, uses **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer **13463-67-7**, Titania, uses **14807-96-6**, Talc, uses **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile **28960-88-5**, Trifluoroethylene-vinylidene fluoride copolymer
(method of fabrication of single ion conductor-containing composite polymer electrolyte for lithium secondary battery)

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

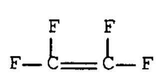
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



RN 9002-84-0 HCAPLUS
CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

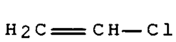
CRN 116-14-3
CMF C2 F4



RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

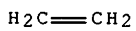
CRN 75-01-4
CMF C2 H3 Cl



RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

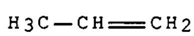
CRN 74-85-1
CMF C2 H4



RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

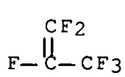


RN 9004-34-6 HCAPLUS
CN Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

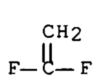
CM 1

CRN 116-15-4
CMF C3 F6

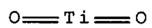


CM 2

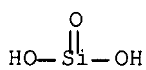
CRN 75-38-7
CMF C2 H2 F2



RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (CA INDEX NAME)



RN 14807-96-6 HCAPLUS
CN Talc (Mg3H2(SiO3)4) (CA INDEX NAME)

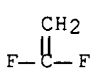


●3/4 Mg

RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

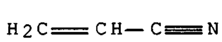
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

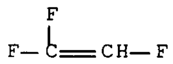
CRN 107-13-1
CMF C3 H3 N



RN 28960-88-5 HCAPLUS
CN Ethene, 1,1,2-trifluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

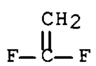
CM 1

CRN 359-11-5
CMF C2 H F3

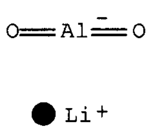


CM 2

CRN 75-38-7
CMF C2 H2 F2



IT **12003-67-7**, Aluminum lithium oxide allio2
(γ-form; method of fabrication of single ion conductor-containing composite polymer electrolyte for lithium secondary battery)
RN 12003-67-7 HCAPLUS
CN Aluminate (AlO21-), lithium (1:1) (CA INDEX NAME)



IC ICM H01M010-40
INCL 429309000; X42-931.4; X42-931.6; X42-931.7
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Composites
Pore size
(method of fabrication of single ion conductor-containing composite polymer electrolyte for lithium secondary battery)
IT 79-41-4D, Methacrylic acid, alkaline metal salt, copolymer ionomer with Me methacrylate 80-62-6D, Methyl methacrylate, alkaline metal itaconate copolymer ionomer 80-62-6D, Methyl methacrylate, alkaline metal maleate copolymer ionomer 80-62-6D, Methyl methacrylate, alkaline metal methacrylate copolymer ionomer 96-47-9, 2-Methyltetrahydrofuran 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 97-65-4D, Itaconic acid, alkaline metal salt, copolymer ionomer with Me methacrylate 105-58-8, Diethyl carbonate 107-31-3, Methyl formate 108-32-7, Propylene carbonate 109-94-4, Ethyl formate 109-99-9, Thf, uses 110-16-7D, Maleic acid, alkaline metal salt, copolymer ionomer with Me methacrylate 110-71-4 616-38-6, Dimethyl carbonate

623-53-0, Ethyl methyl carbonate **1344-28-1**, Alumina, uses
7631-86-9, Silica, uses 7791-03-9, Lithium perchlorate
9002-84-0, Ptfe **9002-86-2**, Polyvinyl chloride
9002-88-4, Polyethylene **9003-07-0**, Polypropylene
9003-20-7, Polyvinyl acetate 9003-21-8, Polymethylacrylate
9003-32-1, Polyethylacrylate 9003-42-3, Polyethylmethacrylate
9003-49-0, Polybutylacrylate 9003-63-8, Polybutyl methacrylate
9004-34-6, Cellulose, uses 9011-14-7, Pmma **9011-17-0**
, Hexafluoropropylene-vinylidene fluoride copolymer **13463-67-7**
, Titania, uses 14283-07-9, Lithium tetrafluoroborate
14807-96-6, Talc, uses 17347-75-0, Tungsten phosphate
21324-40-3, Lithium hexafluorophosphate **24937-79-9**, Pvdf
25013-42-7, Molybdenum phosphate **25014-41-9**,
Polyacrylonitrile 25322-68-3, Peo 25322-69-4, Polypropylene oxide
25684-76-8, Tetrafluoroethylene-vinylidene fluoride copolymer
28960-88-5, Trifluoroethylene-vinylidene fluoride copolymer
33454-82-9, Lithium triflate 90076-65-6
(method of fabrication of single ion conductor-containing composite polymer electrolyte for lithium secondary battery)

IT **12003-67-7**, Aluminum lithium oxide allio2
(γ-form; method of fabrication of single ion conductor-containing composite polymer electrolyte for lithium secondary battery)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 18 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:905471 HCAPLUS Full-text
DOCUMENT NUMBER: 141:382157
TITLE: Method of fabrication of composite polymer electrolyte of different morphologies for lithium secondary **battery**
INVENTOR(S): Lee, Young Gi; Kim, Kwang Man; Ryu, Kwang Sun; Chang, Soon Ho
PATENT ASSIGNEE(S): S. Korea
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2004214088	A1	20041028	US 2003-748363		20031229
KR 2004092188	A	20041103	KR 2003-26419		20030425
JP 2004327422	A	20041118	JP 2003-431458		20031225
CN 1610169	A	20050427	CN 2003-10125472		20031231
PRIORITY APPLN. INFO.:			KR 2003-26419	A	20030425

ED Entered STN: 29 Oct 2004

AB A composite polymer electrolyte for a lithium secondary **battery** and a method of manufacturing the same are provided. The composite polymer electrolyte includes a composite **film** structure which includes a first **porous** polymer **film** with good mech. properties and a second **porous** polymer **film** with submicro-scale morphol. of more compact **porous** structure than the first **porous** polymer structure, coated on a surface of the first **porous** polymer **film**, and an electrolyte solution impregnated into the composite **film** structure. The different morphologies of the composite **film** structure enable to an increase in mech. properties and ionic conductivity Furthermore, the charge/discharge

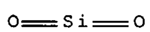
cycle performance and stability of a lithium metal polymer secondary **battery** are enhanced.

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses **9002-84-0**, Ptfe **9002-86-2**, Polyvinyl chloride **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene **9004-34-6**, Cellulose, uses **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer **12003-67-7**, Aluminum lithium oxide allio2 **13463-67-7**, Titania, uses **14807-96-6**, Talc, uses **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile **28960-88-5**, Trifluoroethylene-vinylidene fluoride copolymer
(method of fabrication of composite polymer electrolyte of different morphologies for lithium secondary **battery**)

RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

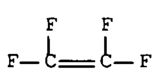
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



RN 9002-84-0 HCAPLUS
CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

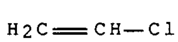
CRN 116-14-3
CMF C2 F4



RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

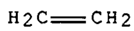
CRN 75-01-4
CMF C2 H3 Cl



RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

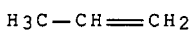
CRN 74-85-1
CMF C2 H4



RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

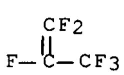


RN 9004-34-6 HCAPLUS
CN Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

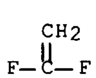
CM 1

CRN 116-15-4
CMF C3 F6

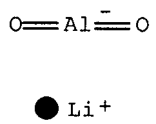


CM 2

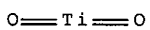
CRN 75-38-7
CMF C2 H2 F2



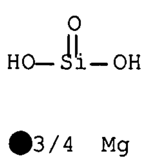
RN 12003-67-7 HCAPLUS
CN Aluminate (AlO21-), lithium (1:1) (CA INDEX NAME)



RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (CA INDEX NAME)



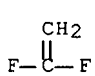
RN 14807-96-6 HCAPLUS
CN Talc (Mg3H2(SiO3)4) (CA INDEX NAME)



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

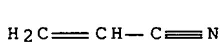
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

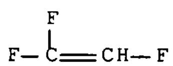
CRN 107-13-1
CMF C3 H3 N



RN 28960-88-5 HCAPLUS
CN Ethene, 1,1,2-trifluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

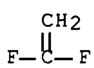
CM 1

CRN 359-11-5
CMF C2 H F3



CM 2

CRN 75-38-7
CMF C2 H2 F2



IC ICM H01M010-40
INCL 429309000; 429316000; 429317000; 429314000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST polymer electrolyte different morphol lithium secondary **battery**
IT Secondary **batteries**
(lithium; method of fabrication of composite polymer electrolyte of different morphologies for lithium secondary **battery**)
IT **Battery electrolytes**
Composites
Polymer morphology
(method of fabrication of composite polymer electrolyte of different morphologies for lithium secondary **battery**)
IT Acrylic polymers, uses
Fluoropolymers, uses
Polyamide fibers, uses
Polyimides, uses
Polyoxyalkylenes, uses
Polysulfones, uses
Polyurethanes, uses
Zeolites (synthetic), uses
(method of fabrication of composite polymer electrolyte of different morphologies for lithium secondary **battery**)
IT 96-47-9, 2-Methyltetrahydrofuran 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 107-31-3, Methyl formate 108-32-7, Propylene carbonate 109-94-4, Ethyl

formate 109-99-9, Thf, uses 110-71-4 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses 7791-03-9, Lithium perchlorate **9002-84-0**, Ptfe **9002-86-2**, Polyvinyl chloride **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene 9003-20-7, Polyvinyl acetate 9003-21-8, Polymethyl acrylate 9003-32-1, Polyethyl acrylate 9003-42-3, Polyethyl methacrylate 9003-49-0, Polybutylacrylate 9003-63-8, Polybutylmethacrylate **9004-34-6**, Cellulose, uses 9011-14-7, Pmma **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer **12003-67-7**, Aluminum lithium oxide allio2 **13463-67-7**, Titania, uses 14283-07-9, Lithium tetrafluoroborate **14807-96-6**, Talc, uses 21324-40-3, Lithium hexafluorophosphate **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile 25322-68-3, Peo 25322-69-4, Polypropylene oxide **28960-88-5**, Trifluoroethylene-vinylidene fluoride copolymer 33454-82-9, Lithium triflate 90076-65-6
(method of fabrication of composite polymer electrolyte of different morphologies for lithium secondary **battery**)

IT 67-64-1, Acetone, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses 872-50-4, n-Methylpyrrolidone, uses
(method of fabrication of composite polymer electrolyte of different morphologies for lithium secondary **battery**)

L45 ANSWER 19 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:801740 HCAPLUS Full-text
DOCUMENT NUMBER: 141:298722
TITLE: Method for manufacturing batteries
INVENTOR(S): Aihara, Shigeru; Nishimura, Takashi; Hamano, Hiroshi; Takemura, Daigo; Yoshioka, Shoji; Hiroi, Osamu; Kuriki, Hironori; Arakane, Atsushi; Hosokawa, Junichi
PATENT ASSIGNEE(S): Mitsubishi Electric Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004273282	A	20040930	JP 2003-62705	20030310
PRIORITY APPLN. INFO.:			JP 2003-62705	20030310

ED Entered STN: 01 Oct 2004

AB Batteries, having an electrolyte retaining **porous** polymer-filler **layer** between a cathode and an anode, are manufactured by preparing a polymer solution containing an acidic filler and a foaming agent, and gasifying the foaming agent.

IT **1344-28-1**, Alumina, uses **24937-79-9**, Poly(vinylidene fluoride)
(manufacture of secondary lithium batteries with electrolyte retaining **porous** polymer-acidic filler **layers**)

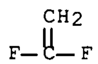
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

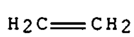
CRN 75-38-7
CMF C2 H2 F2



IT **9002-88-4**, Polyethylene
(manufacture of secondary lithium batteries with electrolyte retaining **porous** polymer-acidic filler **layers**)
RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4



IC ICM H01M010-40
ICS H01M002-14; H01M006-02; H01M010-04
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
IT Secondary batteries
(lithium; manufacture of secondary lithium batteries with electrolyte retaining **porous** polymer-acidic filler **layers**)
IT **Battery electrolytes**
(manufacture of secondary lithium batteries with electrolyte retaining **porous** polymer-acidic filler **layers**)
IT Fluoropolymers, uses
(manufacture of secondary lithium batteries with electrolyte retaining **porous** polymer-acidic filler **layers**)
IT 124-38-9, Carbon dioxide, uses 872-50-4, NMP, uses
(in manufacture of secondary lithium batteries with electrolyte retaining **porous** polymer-acidic filler **layers**)
IT **1344-28-1**, Alumina, uses **24937-79-9**, Poly(vinylidene fluoride)
(manufacture of secondary lithium batteries with electrolyte retaining **porous** polymer-acidic filler **layers**)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate **9002-88-4**, Polyethylene 21324-40-3, Lithium hexafluorophosphate
(manufacture of secondary lithium batteries with electrolyte retaining **porous** polymer-acidic filler **layers**)

L45 ANSWER 20 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:99706 HCAPLUS Full-text
DOCUMENT NUMBER: 141:9503
TITLE: Preparation and Characterization of Asymmetric

Composite Polymer Electrolytes for Lithium Metal Polymer Batteries

AUTHOR(S): Lee, Young-Gi; Ryu, Kwang Sun
CORPORATE SOURCE: Power Source Device Team, Electronics and Telecommunications Research Institute, Daejeon, 305-350, S. Korea

SOURCE: Polymer Bulletin (Heidelberg, Germany) (2004), 51(4), 315-320
CODEN: POBUDR; ISSN: 0170-0839
PUBLISHER: Springer-Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 08 Feb 2004

AB An asym. composite polymer electrolyte composed of a micro- **porous** polyethylene support with a composite submicro- **porous layer** is described. An ethylene carbonate/dimethyl carbonate/LiPF6 solution fills the pores of the composite. The maximum ionic conductivity of this system was 7.0 + 10-3 S/cm at ambient temperature The conductivity is affected by the amount of liquid electrolyte in the matrix.

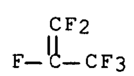
IT **9011-17-0**
(composite with silica; in preparation and characterization of asym. composite polymer electrolytes for lithium polymer batteries)

RN 9011-17-0 HCAPLUS

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

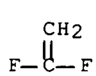
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

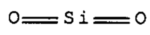
CRN 75-38-7
CMF C2 H2 F2



IT **7631-86-9D**, Silica, silanized
(fumed, composite with hexafluoropropylene-vinylidene difluoride copolymer; in preparation and characterization of asym. composite polymer electrolytes for lithium polymer batteries)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



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IT   9002-88-4, Polyethylene
        (preparation and characterization of asym. composite polymer
        electrolytes supported on polyethylene for lithium batteries)
RN   9002-88-4  HCAPLUS
CN   Ethene, homopolymer  (CA INDEX NAME)

     CM   1

     CRN  74-85-1
     CMF  C2 H4
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CC   52-2 (Electrochemical, Radiational, and Thermal Energy
     Technology)
     Section cross-reference(s): 38
IT   Battery electrolytes
       Composites
     Polymer electrolytes
        (preparation and characterization of asym. composite polymer
        electrolytes for lithium polymer batteries)
IT   9011-17-0
        (composite with silica; in preparation and characterization of asym.
        composite polymer electrolytes for lithium polymer batteries)
IT   7631-86-9D, Silica, silanized
        (fumed, composite with hexafluoropropylene-vinylidene difluoride
        copolymer; in preparation and characterization of asym. composite
        polymer electrolytes for lithium polymer batteries)
IT   9002-88-4, Polyethylene
        (preparation and characterization of asym. composite polymer
        electrolytes supported on polyethylene for lithium batteries)
REFERENCE COUNT:          19     THERE ARE 19 CITED REFERENCES AVAILABLE FOR
                                 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
                                 RE FORMAT

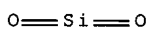
L45  ANSWER 21 OF 45  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2003:994044  HCAPLUS  Full-text
DOCUMENT NUMBER:          140:256169
TITLE:                    Experimental investigations on PVC-LiCF3SO3-SiO2
                          composite polymer electrolytes
AUTHOR(S):                Subban, R. H. Y.; Arof, A. K.
CORPORATE SOURCE:         Faculty of Applied Science, MARA University of
                          Technology, Selangor, 40500, Malay.
SOURCE:                   Journal of New Materials for Electrochemical
                          Systems (2003), 6(3), 197-203
                          CODEN: JMESFQ; ISSN: 1480-2422
PUBLISHER:                Journal of New Materials for Electrochemical
                          Systems
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
ED   Entered STN:  22 Dec 2003
```

AB The preparation and characterization of composite polymer electrolytes based on polyvinyl chloride (PVC) with lithium trifluoromethanesulfonate ($LiCF_3SO_3$) as doping salt for different concns. of silicon dioxide (SiO_2) as the inorg. filler were studied. FTIR and x-ray diffraction studies show that complexation has taken place mainly in the crystalline phase. The effect of inorg. filler on the elec. conductivity of the composite polymer electrolytes were studied as a function of SiO_2 content and temperature The prepared films were also subjected to thermal anal. and the results presented and discussed.

IT **7631-86-9**, Fumed silica, uses
(colloidal, complexes with PVC and LiCF3SO3; phys. property exptl. investigations on PVC-LiCF3SO3-SiO2 composite polymer electrolytes)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



IT **9002-86-2**, Polyvinyl chloride
(complexes with silica and LiCF3SO3; phys. property exptl. investigations on PVC-LiCF3SO3-SiO2 composite polymer electrolytes)

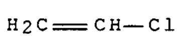
RN 9002-86-2 HCAPLUS

CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

IT **Battery electrolytes**
Complexation
Composites
Electric conductivity
Electric impedance
Fillers
Polymer electrolytes
(phys. property exptl. investigations on PVC-LiCF3SO3-SiO2 composite polymer electrolytes)

IT **7631-86-9**, Fumed silica, uses
(colloidal, complexes with PVC and LiCF3SO3; phys. property exptl. investigations on PVC-LiCF3SO3-SiO2 composite polymer electrolytes)

IT **9002-86-2**, Polyvinyl chloride
(complexes with silica and LiCF3SO3; phys. property exptl. investigations on PVC-LiCF3SO3-SiO2 composite polymer electrolytes)

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 22 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:471041 HCAPLUS Full-text

DOCUMENT NUMBER: 139:24138
TITLE: Secondary nonaqueous electrolyte battery
INVENTOR(S): Saito, Satoshi
PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003173769	A	20030620	JP 2001-371510	20011205
PRIORITY APPLN. INFO.:			JP 2001-371510	20011205

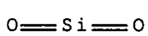
ED Entered STN: 20 Jun 2003

AB The battery has a nonaq. electrolyte between an active mass containing anode mixture **layer** and an active mass containing cathode mixture **layer**; where the electrolyte is made of an electrolyte solution contained **porous** polymer **film**; and the anode mixture **layer** and/or the cathode mixture **layer** contains an inorg. solid electrolyte powder.

IT **7631-86-9**, Silica, uses
(electrodes containing inorg. solid electrolyte powders for secondary lithium batteries)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



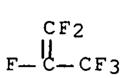
IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
(electrolyte; nonaq. electrolytes containing **porous** polymer **films** for secondary lithium batteries)

RN 9011-17-0 HCAPLUS

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

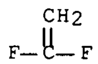
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



IC ICM H01M004-02
ICS H01M002-16; H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST secondary battery nonaq electrolyte **porous** polymer **film**; inorg solid electrolyte powder electrode secondary battery
IT Secondary batteries
(electrolytes and electrodes containing **porous** polymers and inorg. solid electrolytes resp. for secondary lithium batteries)
IT **Battery electrolytes**
(nonaq. electrolytes containing **porous** polymer **films** for secondary lithium batteries)
IT **7631-86-9**, Silica, uses 12057-24-8, Lithium oxide, uses
(electrodes containing inorg. solid electrolyte powders for secondary lithium batteries)
IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
(electrolyte; nonaq. electrolytes containing **porous** polymer **films** for secondary lithium batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 21324-40-3, Lithium hexafluorophosphate
(nonaq. electrolytes containing **porous** polymer **films** for secondary lithium batteries)

L45 ANSWER 23 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:94595 HCAPLUS Full-text
DOCUMENT NUMBER: 138:156242
TITLE: Sealed lead storage battery having gel electrolyte
INVENTOR(S): Kano, Tetsuya; Noguchi, Hiromasa
PATENT ASSIGNEE(S): Furukawa Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003036831	A	20030207	JP 2001-220885	20010723
PRIORITY APPLN. INFO.:			JP 2001-220885	20010723

ED Entered STN: 07 Feb 2003
AB The battery has an integrated or **laminated** separator, containing a ≥0.5 mm thick mat of synthetic resin fiber or long glass fiber having diameter 10-25 μm, and a ≤0.5 mm thick **porous sheet** having maximum pore size ≤50 μm and average pore size ≥2 μm and containing ≤15 % SiO_2; and a gel electrolyte, made of a dilute sulfuric acid, containing a small-quantity soluble sulfate, 0.75-4 or 1-3 % phosphoric acid and ≤8 % fine silica particles, and filling the separator hole or the space inside the battery around an electrode-separator stack, containing the separator between an anode and a cathode; where the cathode is pressure welded with the separator mat.
IT **9002-88-4**, Polyethylene

(hydrophilic, **porous sheet** separator; secondary lead-acid batteries containing thickness and pore size controlled separators and phosphoric acid and silica amount controlled gel electrolytes)

RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1

CMF C2 H4

$H_2C=CH_2$

IT **7631-86-9**, Silica, uses

(secondary lead-acid batteries containing thickness and pore size controlled separators and phosphoric acid and silica amount controlled gel electrolytes)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)

$O=Si=O$

IC ICM H01M002-16

ICS H01M002-16; H01M002-18; H01M010-08; H01M010-10; H01M010-12

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

IT **Battery electrolytes**

(gel electrolytes containing phosphoric acid and silica with controlled amount for secondary lead-acid batteries)

IT Secondary battery separators

(separators containing mats and **porous sheets** with controlled thickness and pore size for secondary lead-acid batteries)

IT **9002-88-4**, Polyethylene

(hydrophilic, **porous sheet** separator; secondary lead-acid batteries containing thickness and pore size controlled separators and phosphoric acid and silica amount controlled gel electrolytes)

IT **7631-86-9**, Silica, uses

(secondary lead-acid batteries containing thickness and pore size controlled separators and phosphoric acid and silica amount controlled gel electrolytes)

L45 ANSWER 24 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:811781 HCAPLUS Full-text

DOCUMENT NUMBER: 137:327379

TITLE: Continuous production of trilaminates by coextrusion for polymer lithium batteries

INVENTOR(S): Naarmann, Herbert; Kruger, Franz Josef; Schaefer, Tim

PATENT ASSIGNEE(S): Dilo Trading A.-G., Switz.

SOURCE: Ger. Offen., 10 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10118639	A1	20021024	DE 2001-10118639	20010412
DE 10118639	B4	20070614		
PRIORITY APPLN. INFO.:			DE 2001-10118639	20010412

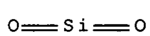
ED Entered STN: 25 Oct 2002

AB The invention concerns the production of Trilamainates, consisting of an anode composite, polymer electrolytes and a cathode composite, which are provided on the cathode side and on the anode side with a metallic grid. The production is carried out continuously, preferably via coextrusion. The systems thus obtained form the basis for rechargeable polymer lithium batteries. The procedure according to invention contains the production of anode masses, cathode material as well as the polymer gel electrolyte, which are: (1) homogeneously developed, (2) agree in structural viscosity and rheol., and (3) defined in shape by extrusion; and can be continuously formed as bands with reproducible wts. and laminated. The anode mass consists of graphite, preferably synthetic, e.g., mesocarbon microbeads with spherical particles or graphite fibers as well as a polymer binder e.g. polyfluoroelastomeres, polyolefins, polybutadiene or styrene copolymers, as well as polymethacrylates with alc. residues C4-C20, and polyvinyl compds. such as polyvinylpyrrolidone, polyvinylimidazole, polyvinylpyridin etc. and their copolymers, e.g. with methacrylic acid ester with alc. residues C4-C20, and a conducting salt e.g., LiPF6 or Li oxalato borates, etc.

IT **7631-86-9**, Silica, uses **9011-17-0**, Kynar 2801
(continuous production of trilaminates by coextrusion for polymer lithium batteries)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



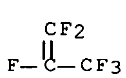
RN 9011-17-0 HCAPLUS

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

CM 1

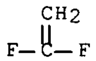
CRN 116-15-4

CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2

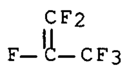


IC ICM H01M010-38
ICS H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Battery anodes
Battery cathodes
Extrusion of plastics and rubbers
Laminated materials
(continuous production of trilaminates by coextrusion for polymer lithium batteries)
IT **Battery electrolytes**
(polymer gel; continuous production of trilaminates by coextrusion for polymer lithium batteries)
IT **7631-86-9**, Silica, uses **9011-17-0**, Kynar 2801
(continuous production of trilaminates by coextrusion for polymer lithium batteries)
REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 25 OF 45 HCAPLUS
ACCESSION NUMBER: 2002:635135 HCAPLUS Full-text
DOCUMENT NUMBER: 138:58808
TITLE: Effect of inorganics on polymer electrolytes for lithium batteries
AUTHOR(S): Bai, Ying; Wu, Feng; Ren, Xu-mei
CORPORATE SOURCE: School of Chemical Engineering and Materials Science, Beijing Institute of Technology, National Development Center for Hi-Tech Green Materials, Beijing, 100081, Peop. Rep. China
SOURCE: Dianchi (2002), 32(Suppl.), 56-57
CODEN: DNCHEP; ISSN: 1001-1579
PUBLISHER: Dianchi Zazhishe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
ED Entered STN: 22 Aug 2002
AB On the basis of the preparation of the PVDF-HFP **porous films** by a phase-inversion method, the composite polymer electrolyte membranes with SiO2 or zeolite additive were prepared, which could be used in the secondary lithium batteries. The **film** morphologies and the charge-discharge features were characterized with SEM and electrochem. test, resp. The anal. of the n-BuOH uptakes showed that the composite polymer **films** had higher porosities and could meet the demands of the lithium secondary batteries.
IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
(effect of inorgs. on polymer electrolytes for lithium batteries)
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

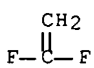
CM 1

CRN 116-15-4
CMF C3 F6

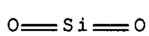


CM 2

CRN 75-38-7
CMF C2 H2 F2



IT **7631-86-9**, Silica, uses
(effect of inorgs. on polymer electrolytes for lithium batteries)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



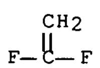
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Polymer electrolytes
(effect of inorgs. on polymer electrolytes for lithium batteries)
IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
(effect of inorgs. on polymer electrolytes for lithium batteries)
IT **7631-86-9**, Silica, uses
(effect of inorgs. on polymer electrolytes for lithium batteries)

L45 ANSWER 26 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:635132 HCAPLUS Full-text
DOCUMENT NUMBER: 138:58806
TITLE: Preparation of a composite polymer electrolyte for Li-ion batteries
AUTHOR(S): Ai, Xin-ping; Yuan, Li-xia; Yan, Hai-jun; Yang, Han-xi
CORPORATE SOURCE: College of Chemistry and Molecular Science, Wuhan University, Wuhan, Hubei, 430072, Peop. Rep. China
SOURCE: Dianchi (2002), 32(Suppl.), 50-52
CODEN: DNCHEP; ISSN: 1001-1579

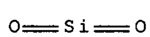
PUBLISHER: Dianchi Zazhishe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
ED Entered STN: 22 Aug 2002
AB The composite polymer electrolyte was prepared by casting a **layer** of PVDF-based polymer electrolyte on a **porous** polypropane substrate and its structural and electrochem. properties were characterized by SEM and impedance measurements. In comparison with conventional plasticized polymer electrolyte, this composite polymer electrolyte exhibited not only enhanced mech. strength and dimensional stability, but also showed higher ionic conductivity, facilitating for practical applications for polymer lithium ion batteries.
IT **24937-79-9**, Pvdf
(preparation of composite polymer electrolyte for Li-ion batteries)
RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



IT **7631-86-9**, Silica, uses
(preparation of composite polymer electrolyte for Li-ion batteries)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Polymer electrolytes
(preparation of composite polymer electrolyte for Li-ion batteries)
IT **24937-79-9**, Pvdf
(preparation of composite polymer electrolyte for Li-ion batteries)
IT **7631-86-9**, Silica, uses
(preparation of composite polymer electrolyte for Li-ion batteries)

L45 ANSWER 27 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:595200 HCAPLUS Full-text
DOCUMENT NUMBER: 137:143066
TITLE: A multi-**layered**, UV-cured polymer electrolyte for lithium secondary battery
INVENTOR(S): Yun, Kyung-Suk; Cho, Byung-Won; Cho, Won-Il; Kim, Hyung-Sun; Kim, Un-Sek; Rhee, Hee-Woo; Kim, Yong-Tae
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S.

	Korea
SOURCE:	PCT Int. Appl., 40 pp.
	CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2002061874	A1	20020808	WO 2001-KR133		20010131
W: JP, KR, US					
US 2003180623	A1	20030925	US 2003-275383		20030522
US 7135254	B2	20061114			
PRIORITY APPLN. INFO.:			WO 2001-KR133	W	20010131

ED Entered STN: 09 Aug 2002

AB The present invention relates to a multi-**layered**, UV-cured polymer electrolyte and lithium secondary battery comprising the same, wherein the polymer electrolyte comprises: (A) a separator **layer** formed of polymer electrolyte, PP, PE, PVdF or non-woven fabric, wherein the separator **layer** having two surfaces; (B) at least one gelled polymer electrolyte **layer** located on at least one surface of the separator **layer** comprising: (a) polymer obtained by curing ethyleneglycoldi(meth)acrylate oligomer of the formula by UV irradiation: CH2=CR1COO(CH2CH2O)nCOCR2=CH2 wherein, R1 and R2 are independently hydrogen or Me group, and n is a integer of 3-20; and (b) at least one polymer selected from the group consisting of PVdF-based polymer, PAN-based polymer, PMMA-based polymer and PVC-based polymer; and (C) organic electrolyte solution in which lithium salt is dissolved in a solvent.

IT **9002-86-2**, Polyvinyl chloride **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene **9011-17-0**, Kynar 2801 **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile
(**multilayered**, UV-cured polymer electrolyte for lithium secondary battery)

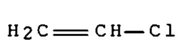
RN 9002-86-2 HCAPLUS

CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl



RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

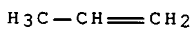
CRN 74-85-1

CMF C2 H4

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

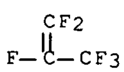
CRN 115-07-1
CMF C3 H6



RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

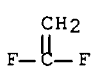
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

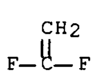
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

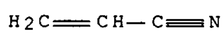
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

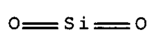
CM 1

CRN 107-13-1
CMF C3 H3 N



IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses **9002-84-0**, Ptfe **12003-67-7**, Aluminum lithium oxide allio2 **13463-67-7**, Titania, uses
(**porous** filler; **multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

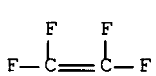
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



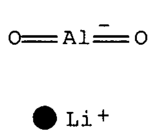
RN 9002-84-0 HCAPLUS
CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

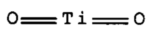
CRN 116-14-3
CMF C2 F4



RN 12003-67-7 HCAPLUS
CN Aluminate (AlO21-), lithium (1:1) (CA INDEX NAME)



RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Secondary batteries
(lithium; **multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT **Battery electrolytes**
Polymer electrolytes
(**multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT Coke
Fluoropolymers, uses
Polymer blends
(**multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT Crosslinking
(photochem.; **multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT Fluoropolymers, uses
Polymers, uses
(**porous** filler; **multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT Lithium alloy, base
(**multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT 102-71-6, Triethanolamine, uses 102-82-9, Tributylamine 103-83-3, n-Benzyldimethylamine 121-44-8, Triethylamine, uses
(UV curing accelerator; **multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT 84-51-5, 2-EthylAnthraquinone 84-65-1, Anthraquinone 93-97-0, Benzoyl benzoate 119-61-9, Benzophenone, uses 120-51-4, Benzyl benzoate 131-09-9, 2-ChloroAnthraquinone 492-22-8, Thioxanthone 574-09-4, Ethyl benzoin ether 947-19-3, 1-Hydroxycyclohexyl phenyl ketone 2648-61-5 3524-62-7 5293-97-0, 2,2'-Dichlorobenzophenone 6175-45-7, 2,2-Diethoxyacetophenone 6652-28-4, Isopropyl benzoin ether 6652-29-5, Benzoin phenyl ether 7473-98-5, 2-Hydroxy-2-methyl-1-phenylpropane-1-one 7624-24-0 7727-54-0, Ammonium persulfate 24650-42-8, 2,2-Dimethoxy-2-phenylacetophenone 72896-34-5, Chlorothioxanthone 75081-21-9, Isopropyl thioxanthone
(UV curing initiator; **multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT 7440-44-0, Carbon, uses
(hard; **multilayered**, UV-cured polymer electrolyte for lithium secondary battery)
IT 68-12-2, Dmf, uses 75-05-8, Acetonitrile, uses 79-20-9, Methyl acetate 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-37-3, Ethyl propionate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4,

1,2-Dimethoxyethane 127-19-5, Dimethyl acetamide 141-78-6, Ethyl acetate, uses 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 1314-62-1, Vanadium pentoxide, uses 1332-29-2, Tin oxide 4437-85-8, Butylene carbonate 7439-93-2, Lithium, uses 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate **9002-86-2**, Polyvinyl chloride **9002-88-4**, Polyethylene 9003-00-3, Acrylonitrile-vinyl chloride copolymer **9003-07-0**, Polypropylene 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer 9011-14-7, Pmma **9011-17-0**, Kynar 2801 9056-77-3, Poly(ethylene glycol methacrylate) 12031-65-1, Lithium nickel oxide linio2 12037-42-2, Vanadium oxide v6o13 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate **24937-79-9**, Pvdf 24968-79-4, Acrylonitrile-methylacrylate copolymer **25014-41-9**, Polyacrylonitrile 25086-15-1, Methacrylic acid-methyl methacrylate copolymer 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 90076-65-6 162004-08-2, Cobalt lithium nickel oxide colinio2
(**multilayered**, UV-cured polymer electrolyte for lithium secondary battery)

IT 554-13-2 1304-28-5, Baria, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide (Li(OH)) 1313-59-3, Sodium oxide, uses **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses 7789-24-4, Lithium fluoride, uses **9002-84-0**, Ptfe **12003-67-7**, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses **13463-67-7**, Titania, uses 26134-62-3, Lithium nitride (Li3N)
(**porous** filler; **multilayered**, UV-cured polymer electrolyte for lithium secondary battery)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 28 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:104921 HCAPLUS Full-text
DOCUMENT NUMBER: 136:153908
TITLE: Secondary polymer electrolyte lithium battery
INVENTOR(S): Morikawa, Takamoto; Eda, Nobuo
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002042872	A	20020208	JP 2000-230576	20000731
PRIORITY APPLN. INFO.:			JP 2000-230576	20000731

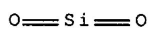
ED Entered STN: 08 Feb 2002

AB The battery has a polymer gel electrolyte containing a polyacrylonitrile anode side **film**, which becomes a gel when absorbed a nonaq. electrolyte solution, and a microporous polyolefin cathode side. The polyacrylonitrile **film** may contain powdered SiO2 or Al2O3 inorg. filler.

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(additives in electrolytes containing gelled acrylonitrile polymer **layer** and **porous** polyolefin **layer** for

      secondary lithium batteries)
RN   1344-28-1 HCAPLUS
CN   Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN   7631-86-9 HCAPLUS
CN   Silica (CA INDEX NAME)



IT   **9002-88-4**, Polyethylene
      (**laminated** polymer electrolytes containing **porous**
      polyolefin cathode side for secondary lithium batteries)
RN   9002-88-4 HCAPLUS
CN   Ethene, homopolymer (CA INDEX NAME)

CM   1

CRN 74-85-1
CMF C2 H4

IC   ICM H01M010-40
CC   52-2 (**Electrochemical**, Radiational, and Thermal Energy
     Technology)
ST   secondary lithium battery **laminated** gel polymer electrolyte;
     polyacrylonitrile polyolefin gel electrolyte **laminate**
     lithium battery
IT   **Battery electrolytes**
      (electrolytes containing gelled acrylonitrile polymer **layer**
      and **porous** polyolefin **layer** for secondary
      lithium batteries)
IT   Polyolefins
      (**laminated** polymer electrolytes containing **porous**
      polyolefin cathode side for secondary lithium batteries)
IT   **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
      (additives in electrolytes containing gelled acrylonitrile polymer
      layer and **porous** polyolefin **layer** for
      secondary lithium batteries)
IT   1310-65-2, Lithium hydroxide
      (electrolytes containing gelled acrylonitrile polymer **layer**
      and **porous** polyolefin **layer** for secondary
      lithium batteries)
IT   25749-57-9, Acrylonitrile-methacrylic acid copolymer
      (**laminated** polymer electrolytes containing gelled
      acrylonitrile polymer anode side for secondary lithium batteries)
IT   **9002-88-4**, Polyethylene
      (**laminated** polymer electrolytes containing **porous**
      polyolefin cathode side for secondary lithium batteries)

L45 ANSWER 29 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

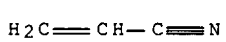
ACCESSION NUMBER: 2002:27745 HCAPLUS Full-text
DOCUMENT NUMBER: 136:72343
TITLE: Nanoparticle composite polymer electrolyte and secondary lithium battery using it
INVENTOR(S): Mishima, Ryoji
PATENT ASSIGNEE(S): Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002008724	A	20020111	JP 2000-229960	20000623
PRIORITY APPLN. INFO.:			JP 2000-229960	20000623

ED Entered STN: 11 Jan 2002
AB Claimed battery is equipped with a composite polymer electrolyte containing an inorg. nanoparticle. Preferably, the battery uses a composite gel polymer containing an electrolyte solution impregnated in a polymer obtained by polymerizing or crosslinking a mixture containing a powdery or liquid monomer or oligomer and ≤100 nm-diameter inorg. nanoparticles. The polymer electrolyte has high strength at high temperature and low shrinkage at low temperature
IT **25014-41-9**, Polyacrylonitrile
(composites with alumina; nanoparticle composite gel polymer electrolyte for secondary lithium battery)
RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



IT **1344-28-1**, Alumina, uses
(composites with polyacrylonitrile; nanoparticle composite gel polymer electrolyte for secondary lithium battery)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT **Battery electrolytes**
Nanocomposites
Nanoparticles
Polymer electrolytes
(nanoparticle composite gel polymer electrolyte for secondary lithium battery)
IT **25014-41-9**, Polyacrylonitrile
(composites with alumina; nanoparticle composite gel polymer

electrolyte for secondary lithium battery)

IT **1344-28-1**, Alumina, uses
(composites with polyacrylonitrile; nanoparticle composite gel polymer electrolyte for secondary lithium battery)

L45 ANSWER 30 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:935958 HCAPLUS Full-text
DOCUMENT NUMBER: 136:56445
TITLE: Methods for preparation of microporous solid electrolytes for rechargeable batteries
INVENTOR(S): Jang, Dong Hun; Kim, Sa Heum; Kim, Han Jun
PATENT ASSIGNEE(S): Finecell Co., Ltd., S. Korea
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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     PATENT NO.          KIND    DATE        APPLICATION NO.         DATE
     ---------------     ----    --------    --------------------    --------
     WO 2001099220        A1     20011227    WO 2000-KR482           20000524
         W:  CN, JP, KR, US
         RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
             NL, PT, SE
     EP 1290749           A1     20030312    EP 2000-927894          20000524
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
             PT, IE, FI, CY
     JP 2003536233        T      20031202    JP 2002-503968          20000524
PRIORITY APPLN. INFO.:                       WO 2000-KR482        W  20000524
```

ED Entered STN: 28 Dec 2001

AB The present invention is directed to an electrolyte **film** and/or a solid electrolyte, having a microporous structure, for a rechargeable cell. According to the present invention, when preparing the electrolyte **film** and/or the solid electrolyte, an inorg. absorbent is added in the amount of more than 70% by weight in a polymer matrix to prevent the **porous** structure from being destructed at the cell-assembling process such as **lamination** or pressing, whereby the absorbing power of a liquid electrolyte to the solid electrolyte **film** and the ionic conductivity can be maintained. The inorg. absorbent contained over the specific amount, together with the microporous structure, improves the capacity of absorbing the liquid electrolyte and, in particular, works as a structure element of increasing the mech. strength of electrolyte **film** and/or solid electrolyte. Therefore, the good ionic conductivity can be maintained even after the assembly of cell.

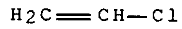
IT **9002-86-2**, Polyvinyl chloride **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer **24937-79-9**, Polyvinylidene fluoride **25014-41-9**, Polyacrylonitrile
(methods for preparation of microporous solid electrolytes for rechargeable batteries)

RN 9002-86-2 HCAPLUS

CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-01-4
CMF C2 H3 Cl



RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

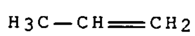
CM 1

CRN 74-85-1
CMF C2 H4

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

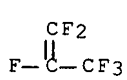
CRN 115-07-1
CMF C3 H6



RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

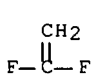
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

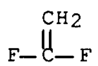
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

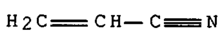
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

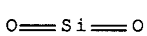
CM 1

CRN 107-13-1
CMF C3 H3 N



IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(**porous**; methods for preparation of microporous solid
electrolytes for rechargeable batteries)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



IC ICM H01M010-38
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy
Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Ionic conductivity
Secondary batteries
(methods for preparation of microporous solid electrolytes for
rechargeable batteries)
IT 67-63-0, Isopropanol, uses 79-41-4D, Methacrylic acid, esters,
polymers 1309-48-4, Magnesium oxide, uses 1318-93-0,

Montmorillonite, uses **9002-86-2**, Polyvinyl chloride
9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol
9002-93-1, Triton x 100 **9003-07-0**, Polypropylene
9003-27-4, Polyisobutylene 9003-29-6, Polybutylene 9011-14-7, Pmma
9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
9012-09-3, Cellulose triacetate 12026-53-8, Paragonite 17831-71-9,
Tetraethylene glycol diacrylate **24937-79-9**, Polyvinylidene
fluoride **25014-41-9**, Polyacrylonitrile 25322-68-3, Peo
31900-57-9, Polydimethylsiloxane 114481-92-4, Maleic
anhydride-vinylidene fluoride copolymer
(methods for preparation of microporous solid electrolytes for
rechargeable batteries)

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(**porous**; methods for preparation of microporous solid
electrolytes for rechargeable batteries)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 31 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:868873 HCAPLUS Full-text
DOCUMENT NUMBER: 136:9101
TITLE: Fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method
INVENTOR(S): Yun, Kyung Suk; Cho, Byung Won; Cho, Won Il; Kim, Hyung Sun; Kim, Un Seok
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001091222	A1	20011129	WO 2000-KR515	20000522
W: JP, KR, US				
PRIORITY APPLN. INFO.:			WO 2000-KR515	20000522

ED Entered STN: 30 Nov 2001

AB The present invention provides a lithium secondary battery and its fabrication method. More particularly, the present invention provides a lithium secondary battery comprising a **porous** polymer electrolyte and its fabrication method, wherein the polymer electrolyte is fabricated by the following process: (a) dissolving at least one polymer with plasticizers and organic electrolyte solvents to obtain at least one polymeric electrolyte solution; (b) adding the obtained polymeric electrolyte solution to a barrel of a spray machine, and (c) spraying the polymeric electrolyte solution onto a substrate using a nozzle to form a **porous** polymer electrolyte **film**. The lithium secondary battery of the present invention has advantages of better adhesion with electrodes, good mech. strength, better performance at low and high temps., and better compatibility with organic electrolytes of a lithium secondary battery.

IT **9002-86-2**, Pvc **9002-88-4**, Polyethylene
9003-07-0, Polypropylene **9004-34-6**, Cellulose, uses
9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
24937-79-9, Pvdf **25014-41-9**, Polyacrylonitrile
(fabrication method for lithium secondary battery with polymer

electrolyte prepared by spray method)
RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-01-4
CMF C2 H3 Cl

$H_2C{=}CH{-}Cl$

RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

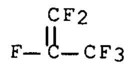
$H_3C{-}CH{=}CH_2$

RN 9004-34-6 HCAPLUS
CN Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

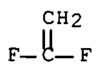
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

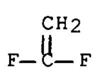
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

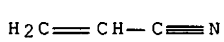
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

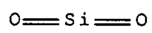
CM 1

CRN 107-13-1
CMF C3 H3 N



IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
9002-84-0, Ptfe **12003-67-7**, Aluminum lithium oxide
allio2 **13463-67-7**, Titania, uses
(filling agent; fabrication method for lithium secondary battery
with polymer electrolyte prepared by spray method)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

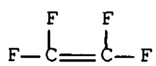
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



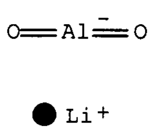
RN 9002-84-0 HCAPLUS
CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

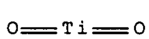
CRN 116-14-3
CMF C2 F4



RN 12003-67-7 HCAPLUS
CN Aluminate (AlO21-), lithium (1:1) (CA INDEX NAME)



RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (CA INDEX NAME)



IC ICM H01M010-38
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
Lamination
Plasticizers
Polymer electrolytes
(fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)
IT 79-20-9, Methyl acetate 105-37-3, Ethyl propionate 109-99-9, Thf, uses 141-78-6, Ethyl acetate, uses 554-12-1, Methyl propionate 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate **9002-86-2**, Pvc **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene 9003-20-7, Polyvinyl acetate **9004-34-6**, Cellulose, uses 9004-35-7, Cellulose acetate

9004-36-8 9004-39-1, Cellulose acetate propionate 9010-76-8, Acrylonitrile-vinylidene chloride copolymer 9010-88-2, Ethyl acrylate-methylmethacrylate copolymer 9011-14-7, Pmma **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate **24937-79-9**, Pvdf 24968-79-4, Acrylonitrile-methyl acrylate copolymer 24980-34-5, Polyethylenesulfide **25014-41-9**, Polyacrylonitrile 25086-89-9, Vinyl acetate-vinyl pyrrolidone copolymer 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25667-11-2, Polyethylenesuccinate 26913-06-4, Poly[imino(1,2-ethanediyl)] 28726-47-8, Poly(oxymethylene-oxyethylene) 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy))-phosphazene]
(fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)

IT 554-13-2, Lithium carbonate 1304-28-5, Barium oxide bao, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide 1313-59-3, Sodium oxide, uses **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses 7789-24-4, Lithium fluoride, uses **9002-84-0**, Ptfe **12003-67-7**, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses **13463-67-7**, Titania, uses 26134-62-3, Lithium nitride
(filling agent; fabrication method for lithium secondary battery with polymer electrolyte prepared by spray method)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 32 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:851557 HCAPLUS Full-text
DOCUMENT NUMBER: 135:374196
TITLE: Fabrication of a lithium secondary battery comprising a superfine fibrous polymer electrolyte
INVENTOR(S): Yun, Kyung Suk; Cho, Byung Won; Jo, Seong Mu; Lee, Wha Seop; Cho, Won Il; Park, Kun You; Kim, Hyung Sun; Kim, Un Seok; Ko, Seok Ku; Chun, Suk Won; Choi, Sung Won
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001089023	A1	20011122	WO 2000-KR501	20000519
W: JP, KR, US				
PRIORITY APPLN. INFO.:			WO 2000-KR501	20000519

ED Entered STN: 23 Nov 2001

AB The present invention provides a lithium secondary battery and its fabrication method. More particularly, the present invention provides a lithium secondary battery comprising super fine fibrous **porous** polymer electrolyte and its preparation method, wherein the polymer electrolyte is fabricated by the following process: (a) dissolving at least one polymer with plasticizers and y

organic electrolyte solvents to obtain at least one polymeric electrolyte solution; (b) adding the obtained polymeric electrolyte solution to a barrel of an electrospinning machine; and, (c) electropinning the polymeric electrolyte solution onto a substrate using a nozzle to form a polymer electrolyte **film**. The lithium secondary battery of the present invention has advantages of better adhesion with electrodes, good mech. strength, better performance at low and high temps., and better compatibility with organic electrolytes of a lithium secondary battery.

IT **9002-86-2**, Pvc **9002-88-4**, Polyethylene
9003-07-0, Polypropylene **9004-34-6**, Cellulose, uses
9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
24937-79-9, Pvdf **25014-41-9**, Polyacrylonitrile
(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-01-4
CMF C2 H3 Cl

$H_2C{=}CH{-}Cl$

RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

$H_3C{-}CH{=}CH_2$

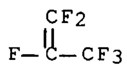
RN 9004-34-6 HCAPLUS
CN Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

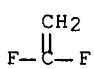
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

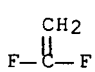
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

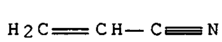
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N

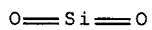


IT **7631-86-9**, Silica, uses

(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)

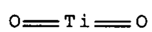


IT **13463-67-7**, Titania, uses

(filling agent; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (CA INDEX NAME)



IT **1344-28-1**, Alumina, uses **9002-84-0**, Ptfe

12003-67-7, Aluminum lithium oxide allio2

(filling agent; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

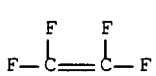
RN 9002-84-0 HCAPLUS

CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

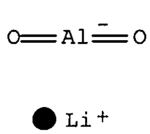
CRN 116-14-3

CMF C2 F4



RN 12003-67-7 HCAPLUS

CN Aluminate (AlO21-), lithium (1:1) (CA INDEX NAME)



IC ICM H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

IT **Battery electrolytes**
Plasticizers
Polymer electrolytes
(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT 79-20-9, Methyl acetate 105-37-3, Ethyl propionate 109-99-9, Thf, uses 141-78-6, Ethyl acetate, uses 554-12-1, Methyl propionate 7791-03-9, Lithium perchlorate **9002-86-2**, Pvc **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene 9003-20-7, Polyvinyl acetate **9004-34-6**, Cellulose, uses 9004-35-7, Cellulose acetate 9004-36-8 9004-39-1, Cellulose acetate propionate 9010-76-8, Acrylonitrile-vinylidene chloride copolymer 9010-88-2, Ethyl acrylate-methyl methacrylate copolymer 9011-14-7, Pmma **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24936-67-2, Polyethylenesulfide **24937-79-9**, Pvdf 24968-79-4, Acrylonitrile-methylacrylate copolymer **25014-41-9**, Polyacrylonitrile 25086-89-9, Vinyl acetate-vinylpyrrolidone copolymer 25266-14-2, Oxyethylene-oxymethylene copolymer 25322-68-3, Peo 25322-69-4, Polypropylene oxide 25569-53-3, Polyethylenesuccinate 26913-06-4, Poly[imino(1,2-ethanediyl)] 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 98973-15-0, Poly[bis(2-(2-methoxyethoxyethoxy)phosphazene]
(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT **7631-86-9**, Silica, uses 26101-52-0
(fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT **13463-67-7**, Titania, uses
(filling agent; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

IT 554-13-2, Lithium carbonate 1304-28-5, Barium oxide bao, uses 1309-48-4, Magnesia, uses 1310-65-2, Lithium hydroxide 1313-59-3, Sodium oxide, uses **1344-28-1**, Alumina, uses 7789-24-4, Lithium fluoride, uses **9002-84-0**, Ptfe **12003-67-7**, Aluminum lithium oxide allio2 12047-27-7, Barium titanium oxide batio3, uses 12057-24-8, Lithia, uses 26134-62-3, Lithium nitride
(filling agent; fabrication of lithium secondary battery comprising superfine fibrous polymer electrolyte)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 33 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER:	2001:598427 HCAPLUS Full-text
DOCUMENT NUMBER:	135:183257
TITLE:	Method of producing ion conductive laminate for electrolyte application in electrochemical cells
INVENTOR(S):	Takeuchi, Masataka; Naijo, Shuichi; Ohkubo, Takashi; Yotsuyanagi, Junji; Hirata, Motoyuki
PATENT ASSIGNEE(S):	Japan
SOURCE:	U.S. Pat. Appl. Publ., 46 pp., Cont.-in-part of U.S. Ser. No. 822,465, abandoned. CODEN: USXXCO
DOCUMENT TYPE:	Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001014420	A1	20010816	US 1997-946850	19971008
US 6306509	B2	20011023		
WO 9735351	A1	19970925	WO 1997-JP944	19970321

W: CA, CN, KR, SG, US
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.:

JP 1996-93682	A	19960321
US 1996-14567P	P	19960401
US 1997-822465	B2	19970321
WO 1997-JP944	A2	19970321

ED Entered STN: 17 Aug 2001

AB A laminate comprises an ion conductive material having excellent ion conductivity at room temperature or at lower temps., a small water content, sufficiently high mech. strength and storage stability to allow for handling the ion conductive material in practice, and a form which is easily integrated into an electrochem. element or electrochem. devices. Also disclosed is a production method thereof, and a method of producing a battery, a capacitor or an electrochem. element or apparatus using the laminate. The laminate comprises an intermediate layer of an ion conductive material having on the upper and lower portions thereof outer layers having an ion conductivity lower than that of the intermediate layer. Furthermore, at least one of the outer layers is a layer comprising a non-electron-conductive material.

IT **9003-07-0**, Polypropylene
(method of producing ion conductive laminate for electrolyte application in electrochem. cells)
RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

$H_3C-CH=CH_2$

IT **1344-28-1**, Alumina, uses
(method of producing ion conductive laminate for electrolyte application in electrochem. cells)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IC ICM B32B003-00
ICS H01M010-26
INCL 429209000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38, 72, 74, 76

IT **Battery electrolytes**
Electric resistance
Electrochromic devices
Electrochromic imaging devices
Ionic conductivity
Laminated materials
Photoelectrochemical cells
Photoelectrodes
(method of producing ion conductive laminate for electrolyte application in electrochem. cells)

IT 7429-90-5, Aluminum, uses 7782-42-5, Graphite, uses
9003-07-0, Polypropylene
(method of producing ion conductive laminate for electrolyte application in electrochem. cells)

IT 429-06-1, Tetraethylammoniumtetrafluoroborate **1344-28-1**, Alumina, uses 2926-30-9, Sodium triflate 7791-03-9, Lithium perchlorate 12597-68-1, stainless steel, uses 14283-07-9, Lithium tetrafluoroborate 25038-59-9, Polyethylene terephthalate, uses 25322-68-3, Polyethylene glycol
(method of producing ion conductive laminate for electrolyte application in electrochem. cells)

L45 ANSWER 34 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:526359 HCAPLUS Full-text
DOCUMENT NUMBER: 135:95194
TITLE: Polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries
INVENTOR(S): Dupasquier, Aurelien; Tarascon, Jean-marie
PATENT ASSIGNEE(S): Valence Technology, Inc., Fr.
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2001008734	A1	20010719	US 1998-190353		19981112
US 6537703	B2	20030325			
US 6537334	B1	20030325	US 2000-689170		20001012
PRIORITY APPLN. INFO.:			US 1998-190353	A3	19981112

ED Entered STN: 20 Jul 2001

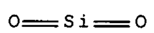
AB A mesoporous polymeric membrane for use as an ionically-conductive inter-electrode separator in a rechargeable battery cell is prepared from a coatable composition comprising a polymeric material, a volatile fluid solvent for the polymeric material, and a second fluid miscible with and of lesser volatility than the solvent, the second fluid being a nonsolvent exhibiting no significant solvency for the polymeric material. A **layer** is cast from the composition to form a **layer** which is gelled and solidified to a self-supporting membrane by volatilizing the solvent and nonsolvent coating vehicle fluids under conditions in which the solvent volatilizes at a rate substantially faster than that of the nonsolvent. As a result the polymeric material initially gels in the more nonsolvent-predominant regions of the **layer** and isolates the nonsolvent as droplets substantially uniformly distributed throughout a matrix of polymeric material. The nonsolvent is subsequently volatilized from the droplets to yield a like distribution of

mesopore voids throughout the membrane matrix. The **porous** membrane is capable of absorbing significant amts. of electrolyte solution to provide suitable ionic conductivity for use in rechargeable battery cells. The addition of inert particulate filler to the coating composition provides further strength in the body of the membrane and, due to preferential accumulation of particles in the dispersed nonsolvent droplets, provides particulate support within the membrane mesopores which prevents collapse of the voids at cell fabrication **laminating** temps. and thus maintains electrolyte absorption capability.

IT **7631-86-9**, Fumed silica, uses
(colloidal; polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
(polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

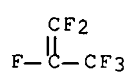
RN 9011-17-0 HCAPLUS

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

CM 1

CRN 116-15-4

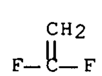
CMF C3 F6



CM 2

CRN 75-38-7

CMF C2 H2 F2



IC ICM H01M002-16
ICS B29C065-00

INCL 429254000

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

IT Secondary batteries

(lithium; polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

IT Absorption
Battery electrolytes
Secondary battery separators
(polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

IT Polyesters, uses
(polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

IT **7631-86-9**, Fumed silica, uses
(colloidal; polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer 12057-17-9, lithium manganese oxide limn2o4 21324-40-3, Lithium hexafluorophosphate
(polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

IT 7440-44-0, Carbon, uses
(polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropanol, uses 67-64-1, Acetone, uses 25038-59-9, Polyethylene terephthalate, uses
(polymeric mesoporous separator elements for **laminated** lithium-ion rechargeable batteries)

L45 ANSWER 35 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:452650 HCAPLUS Full-text
DOCUMENT NUMBER: 135:48607
TITLE: Nonaqueous electrolyte batteries
INVENTOR(S): Iwamoto, Tatsuya; Yasuda, Hideo
PATENT ASSIGNEE(S): Japan Storage Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001167794	A	20010622	JP 1999-351728	19991210
PRIORITY APPLN. INFO.:			JP 1999-351728	19991210

ED Entered STN: 22 Jun 2001

AB The batteries comprise polymer electrolytes having continuous pores in which inorg. fibers of 5-20 μm length and ≥5 aspect ratio are included. The polymer electrolytes show high ionic conductivity due to ion transfer in the continuous pores, and high mech. strength and thermal stability due to the fiber additives.

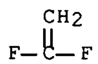
IT **24937-79-9**, Polyvinylidene fluoride
(electrolytes; nonaq. electrolyte batteries having inorg. fiber-reinforced porous polymer electrolytes)

RN 24937-79-9 HCAPLUS

CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

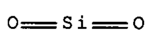
CM 1

CRN 75-38-7
CMF C2 H2 F2



IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(fibers; nonaq. electrolyte batteries having inorg. fiber-reinforced porous polymer electrolytes)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 57
IT **Fiber-reinforced composites**
(polymer matrix, electrolytes; nonaq. electrolyte batteries having inorg. fiber-reinforced porous polymer electrolytes)
IT **Battery electrolytes**
(polymer; nonaq. electrolyte batteries having inorg. fiber-reinforced porous polymer electrolytes)
IT **24937-79-9**, Polyvinylidene fluoride
(electrolytes; nonaq. electrolyte batteries having inorg. fiber-reinforced porous polymer electrolytes)
IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(fibers; nonaq. electrolyte batteries having inorg. fiber-reinforced porous polymer electrolytes)

L45 ANSWER 36 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:390357 HCAPLUS Full-text
DOCUMENT NUMBER: 134:369466
TITLE: Manufacture of **porous** electrode **sheet** and **porous** electrolyte **sheet** for secondary battery
INVENTOR(S): Kamiyama, Yasuhiro; Kubota, Kazunori; Ozaki, Yusuke
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 2001148243	A	20010529	JP 1999-330523	19991119
PRIORITY APPLN. INFO.:			JP 1999-330523	19991119

ED Entered STN: 30 May 2001

AB A mixture containing active mass particles and thermoplastic polymers is extruded from a nozzle onto current collectors for manufacturing the electrode **sheet**. A mixture containing inorg. fillers and thermoplastic polymers is extruded from a nozzle for manufacturing the electrolyte **sheet**. Porosity of the **sheets** can be controlled by the method even without using solvents or plasticizers.

IT **9002-84-0**, Polytetrafluoroethylene **9003-07-0**, Polypropylene **24937-79-9**, Polyvinylidene fluoride
(extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)

RN 9002-84-0 HCAPLUS

CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

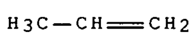
CRN 116-14-3
CMF C2 F4

RN 9003-07-0 HCAPLUS

CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

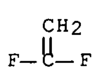


RN 24937-79-9 HCAPLUS

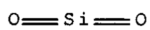
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



IT **7631-86-9**, Silica, uses
(filler, electrolyte **sheet**; extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)



IT **9002-88-4**, LDPE
(low-d.; extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)
RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

IC ICM H01M004-04
ICS H01M004-62; H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST **porous** thermoplastic polymer **sheet** extrusion battery electrode; filler thermoplastic polymer **porous sheet** extrusion battery electrolyte
IT Carbon black, uses
(anode **sheet**; extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)
IT Battery electrodes
Battery electrolytes
(extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)
IT Fluoropolymers, uses
Polyamides, uses
(extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)
IT 52627-24-4, Cobalt lithium oxide
(cathode active mass; extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)
IT **9002-84-0**, Polytetrafluoroethylene **9003-07-0**, Polypropylene 9003-53-6, Polystyrene **24937-79-9**, Polyvinylidene fluoride

(extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)

IT **7631-86-9**, Silica, uses
(filler, electrolyte **sheet**; extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)

IT **9002-88-4**, LDPE
(low-d.; extrusion of thermoplastic polymer with battery component for manufacturing **porous sheet** for battery electrode or electrolyte)

L45 ANSWER 37 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2001:338905 HCAPLUS Full-text
DOCUMENT NUMBER: 134:329094
TITLE: Layered arrangements of lithium electrodes having a thin barrier layer
INVENTOR(S): Chu, May-Ying; Visco, Steven J.; Dejonghe, Lutgard
PATENT ASSIGNEE(S): Polyplus Battery Company, Inc., USA
SOURCE: PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001033651	A1	20010510	WO 2000-US29732	20001027
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6413284	B1	20020702	US 1999-431190	19991101
US 6413285	B1	20020702	US 2000-640467	20000816
CA 2387796	A1	20010510	CA 2000-2387796	20001027
EP 1230694	A1	20020814	EP 2000-973968	20001027
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				
BR 2000015111	A	20021126	BR 2000-15111	20001027
JP 2003529895	T	20031007	JP 2001-535247	20001027
AU 779944	B2	20050217	AU 2001-12407	20001027
MX 2002PA04310	A	20021107	MX 2002-PA4310	20020430

PRIORITY APPLN. INFO.: US 1999-431190 A 19991101
US 2000-640467 A 20000816
WO 2000-US29732 W 20001027

ED Entered STN: 11 May 2001

AB A method employing a bonding layer is used to form metal electrodes with a barrier layer. The method involves fabricating a lithium, or other active material, electrode without depositing a barrier layer on the layer of active material. Rather a smooth barrier layer is formed on a smooth substrate such

as a polymeric electrolyte. A bonding layer is formed on the barrier layer and the bonding layer is then bonded to the active material.

IT **9002-88-4**, Polyethylene **13463-67-7**, Titania, uses
(bonding layer; layered arrangements of lithium electrodes having thin barrier layer)

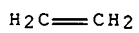
RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

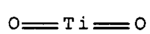
CRN 74-85-1

CMF C2 H4



RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (CA INDEX NAME)



IT **24937-79-9**
(layered arrangements of lithium electrodes having thin barrier layer)

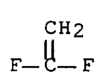
RN 24937-79-9 HCAPLUS

CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-38-7

CMF C2 H2 F2



IC ICM H01M004-04
ICS H01M004-40; H01M004-66

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

IT **Laminated materials**
(barrier layer; layered arrangements of lithium electrodes having thin barrier layer)

IT Adhesion, physical
Battery anodes
Battery electrolytes
Ionic conductivity
(layered arrangements of lithium electrodes having thin barrier layer)

IT 1309-36-0, Pyrite, uses 7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-36-0, Antimony, uses 7440-44-0, Carbon, uses **9002-88-4**, Polyethylene 11099-11-9, Vanadium oxide 12017-00-4, Cobalt oxide coo2 12035-36-8, Nickel oxide nio2 **13463-67-7**, Titania, uses 18282-10-5, Tin dioxide 18868-43-4, Molybdenum dioxide 25233-30-1, Polyaniline 25322-68-3, Peo 30604-81-0, Polypyrrole 197667-28-0, Manganese oxide mn2o4
(bonding layer; layered arrangements of lithium electrodes having thin barrier layer)

IT **24937-79-9** 25038-59-9, Polyethyleneterephthalate, uses
(layered arrangements of lithium electrodes having thin barrier layer)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 38 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:601229 HCAPLUS Full-text
DOCUMENT NUMBER: 133:254873
TITLE: Novel microporous poly(vinylidene fluoride) blend electrolytes for lithium-ion batteries
AUTHOR(S): Wang, Hongpeng; Huang, Haitao; Wunder, Stephanie L.
CORPORATE SOURCE: Department of Chemistry, Temple University, Philadelphia, PA, 19122, USA
SOURCE: Journal of the Electrochemical Society (2000), 147(8), 2853-2861
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 30 Aug 2000

AB Novel microporous poly(vinylidene fluoride)-hexafluoropropylene copolymer (PVDF-HFP) blend electrolyte/electrode films were obtained as the result of phase separation between PVDF-HFP and PEO oligomer additives, which were cast from a common solvent. Upon solvent evaporation and removal of the additives, an interconnected microporous morphol. was formed. The additives can either be removed from the films by vacuum evaporation or methanol extraction The conductivities of the methanol extracted microporous (pore sizes range from 1 to 5 μm) films formed from PVDF-HFP/PEO oligomer blends after electrolyte activation are more than 70% higher than those of the methanol extracted nanoporous (pore size in range from 10 to 100 nm) films prepared from PVDF-HFP/dibutyl phthalate blends. Microporous films formed by vacuum evaporation had conductivities similar to solvent extracted nanoporous separators. Battery performance tests were carried out using lithium cobalt dioxide as the cathode and mesocarbon microbeads as the anode. The cells prepared using extracted microporous PVDF-HFP/PEO oligomer blend films as separators show more than 40% higher specific discharge capacity at the C/2 rate, and 70% higher rate capability than those using extracted nanoporous separators.

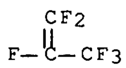
IT **7631-86-9**, Fumed silica, uses
(colloidal; microporous poly(vinylidene fluoride) blend electrolytes for lithium-ion batteries)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

O=Si=O

IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
(microporous poly(vinylidene fluoride) blend electrolytes for
lithium-ion batteries)
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene
(CA INDEX NAME)

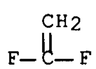
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy
Technology)
Section cross-reference(s): 38
IT Battery electrolytes
Electric conductivity
Ionic conductivity
Polymer electrolytes
Polymer morphology
Secondary battery separators
(microporous poly(vinylidene fluoride) blend electrolytes for
lithium-ion batteries)
IT **7631-86-9**, Fumed silica, uses
(colloidal; microporous poly(vinylidene fluoride) blend
electrolytes for lithium-ion batteries)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7,
Propylene carbonate 616-38-6, Dimethyl carbonate **9011-17-0**
, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3,
Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate
21324-40-3, Lithium hexafluorophosphate
(microporous poly(vinylidene fluoride) blend electrolytes for
lithium-ion batteries)
REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L45 ANSWER 39 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2000:442060 HCAPLUS Full-text
DOCUMENT NUMBER: 133:46207
TITLE: Microporous solid electrolytes for lithium secondary batteries
INVENTOR(S): Jang, Dong Hun; Kim, Sa Heum; Kim, Han Jun; Hong, Sung Min
PATENT ASSIGNEE(S): Finecell Co., Ltd., S. Korea
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2000038263	A1	20000629	WO 1999-KR798		19991221
W: CN, JP, US					
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
EP 1171927	A1	20020116	EP 1999-960009		19991221
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI					
JP 2002543554	T	20021217	JP 2000-590241		19991221
PRIORITY APPLN. INFO.:			KR 1998-57031	A	19981222
			WO 1999-KR798	W	19991221

ED Entered STN: 30 Jun 2000

AB The present invention relates to a solid electrolyte having a good conductivity to lithium ion by allowing the liquid components and lithium salts to be absorbed into the electrolyte **film** containing an absorbent added at the time of its preparation and having a porosity, a process for preparing the same and a rechargeable lithium cell using the same as an electrolyte. As the absorbent, inorg. materials having not more than 40 µm of particle size can be used. As the polymer binder, any binder whose solubility against the liquid electrolyte is small can be used. A wet process can introduce the **porous** structure of the electrolyte **film**. The solid electrolyte according to the present invention has the ionic conductivity of more than approx. 1 to 3 x 10-3 S/cm at room temperature and low reactivity to lithium metal. The cell is fabricated from the solid electrolyte together with electrodes by **lamination** or pressing methods and, the liquid electrolyte, which is decomposed by moisture, is introduced to a cell just before packaging. Therefore, the solid electrolyte according to the present invention is not affected by the humidity and temperature conditions during the manufacturing of the electrolyte **film**. In addition, the solid electrolyte according to the present invention has high thermal, mech. and electrochem. stability, and thus is suitable as an electrolyte for rechargeable lithium cells.

IT **9002-88-4 9003-07-0**, Polypropylene **9004-34-6**, Cellulose, uses
(absorbent; microporous solid electrolytes for lithium secondary batteries)

RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

$H_3C{-}CH{=}CH_2$

RN 9004-34-6 HCAPLUS
CN Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
IT **9002-86-2**, Pvc **9011-17-0**, Vinylidene fluoride-hexafluoropropylene copolymer **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile
(binder; microporous solid electrolytes for lithium secondary batteries)
RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

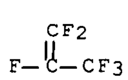
CRN 75-01-4
CMF C2 H3 Cl

$H_2C{=}CH{-}Cl$

RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

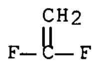
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

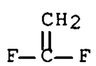
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

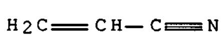
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(**porous**, absorbent; microporous solid electrolytes for lithium secondary batteries)
RN 1344-28-1 HCAPLUS
CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

IC ICM H01M010-36
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Absorbents
Battery electrolytes
(microporous solid electrolytes for lithium secondary batteries)
IT **9002-88-4** **9003-07-0**, Polypropylene 9003-53-6, Polystyrene **9004-34-6**, Cellulose, uses
(absorbent; microporous solid electrolytes for lithium secondary batteries)
IT **9002-86-2**, Pvc 9002-89-5, Polyvinyl alcohol 9003-21-8, 2-Propenoic acid, methyl ester, homopolymer 9003-27-4, Polyisobutylene 9011-14-7, Pmma **9011-17-0**, Vinylidene fluoride-hexafluoropropylene copolymer 9012-09-3, Cellulose triacetate 9016-00-6, Polydimethylsiloxane 17831-71-9, Tetraethyleneglycol diacrylate **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile 25322-68-3 26967-02-2, Poly(butylidene) 114481-92-4, Maleic anhydride-Vinylidene fluoride copolymer
(binder; microporous solid electrolytes for lithium secondary batteries)
IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(**porous**, absorbent; microporous solid electrolytes for lithium secondary batteries)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 40 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:442059 HCAPLUS Full-text
DOCUMENT NUMBER: 133:46206
TITLE: Solid electrolytes using absorbent for rechargeable lithium batteries
INVENTOR(S): Jang, Dong Hun; Kim, Sa Heum; Kim, Han Jun; Oh, Seung Mo
PATENT ASSIGNEE(S): Finecell Co., Ltd., S. Korea
SOURCE: PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 2000038262	A1	20000629	WO 1999-KR797		19991221
W: CN, JP, US					
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
EP 1145354	A1	20011017	EP 1999-960008		19991221
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI					
JP 2002543553	T	20021217	JP 2000-590240		19991221
PRIORITY APPLN. INFO.:			KR 1998-57030	A	19981222
			WO 1999-KR797	W	19991221

ED Entered STN: 30 Jun 2000

AB The present invention relates to a solid electrolyte having conductivity to lithium ion by providing spaces for liquid component and lithium salts to be absorbed by way of introducing an absorbent to the inside of an electrolyte **film**, a process for preparing the same and a rechargeable lithium cell using the same. As the absorbent, polymers or inorg. materials having not more than 40 μm of particle size can be used. As the polymer binder, any binder whose solubility against the liquid electrolyte is small can be used. The solid electrolyte according to the present invention has the ionic conductivity of more than approx. 10-4 S/cm at room temperature The cell is fabricated from the solid electrolyte together with electrodes by **lamination** or pressing methods. The liquid electrolyte, which is decomposed by moisture, is introduced to a cell just before packaging. Therefore, the solid electrolyte according to the present invention is not affected by the humidity and temperature conditions during the manufacturing of the electrolyte **film**. In addition, the solid electrolyte according to the present invention has high mech. strength and little reactivity to lithium metal, and thus is suitable as an electrolyte for rechargeable lithium cells.

IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(**porous**, particles; solid electrolytes using absorbent for rechargeable lithium batteries)

RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)

O═Si═O

IT **9002-86-2**, Polyvinyl chloride **9002-88-4**
9003-07-0, Polypropylene **9004-34-6**, Cellulose, uses
9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
24937-79-9, Polyvinylidene fluoride **25014-41-9**,
Polyacrylonitrile
(solid electrolytes using absorbent for rechargeable lithium batteries)

RN 9002-86-2 HCAPLUS

CN Ethene, chloro-, homopolymer (CA INDEX NAME)

CM 1

CRN 75-01-4

CMF C2 H3 Cl

H2C═CH—Cl

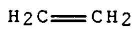
RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1

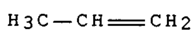
CMF C2 H4



RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

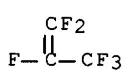


RN 9004-34-6 HCAPLUS
CN Cellulose (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

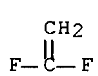
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

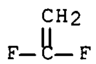
CRN 75-38-7
CMF C2 H2 F2



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (CA INDEX NAME)

CM 1

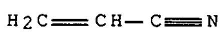
CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



IC ICM H01M010-36
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT Absorbents
Battery electrolytes
Cellulose pulp
(solid electrolytes using absorbent for rechargeable lithium batteries)
IT **1344-28-1**, Alumina, uses **7631-86-9**, Silica, uses
(**porous**, particles; solid electrolytes using absorbent for rechargeable lithium batteries)
IT **9002-86-2**, Polyvinyl chloride **9002-88-4** 9002-89-5, Polyvinyl alcohol **9003-07-0**, Polypropylene 9003-27-4, Polyisobutylene 9003-53-6, Polystyrene **9004-34-6**, Cellulose, uses 9011-14-7, Pmma **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer 9012-09-3, Cellulose triacetate 17831-71-9, Tetraethylene glycol diacrylate **24937-79-9**, Polyvinylidene fluoride **25014-41-9**, Polyacrylonitrile 25322-68-3 26967-02-2, Poly(butylidene) 114481-92-4, Maleic anhydride-vinylidene fluoride copolymer
(solid electrolytes using absorbent for rechargeable lithium batteries)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 41 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:686490 HCAPLUS Full-text
DOCUMENT NUMBER: 131:301471
TITLE: Method for laminating solid polymer electrolyte film
INVENTOR(S): Yotsuyanagi, Junji; Hirata, Motoyuki
PATENT ASSIGNEE(S): Showa Denko K.K., Japan
SOURCE: U.S., 9 pp., Cont.-in-part of U.S. Ser. No.

822,977, abandoned.
CODEN: USXXAM

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5972054	A	19991026	US 1997-946882	19971008
WO 9735350	A1	19970925	WO 1997-JP945	19970321

W: CA, CN, KR, SG, US
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

PRIORITY APPLN. INFO.:

JP 1996-93681	A	19960321
US 1996-14479P	P	19960401
US 1997-822977	B2	19970321
WO 1997-JP945	W	19970321

ED Entered STN: 28 Oct 1999

AB A method for laminating a solid polymer electrolyte film comprises laminating a layer of a fluid solid polymer electrolyte on a base film or on a thin layer comprising a metal or a metal oxide which is laminated on a base film.

IT **1344-28-1**, Aluminum oxide (Al2O3), uses **7631-86-9**, Silica, uses
(method for laminating solid polymer electrolyte film)

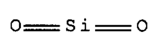
RN 1344-28-1 HCAPLUS

CN Aluminum oxide (Al2O3) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



IT **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene
(method for laminating solid polymer electrolyte film)

RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

RN 9003-07-0 HCAPLUS

CN 1-Propene, homopolymer (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

$H_3C-CH=CH_2$

IC H01M006-00
INCL 429217000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
IT **Battery electrolytes**
Laminated plastic films
Polymer electrolytes
(method for laminating solid polymer electrolyte film)
IT **1344-28-1**, Aluminum oxide (Al2O3), uses **7631-86-9**,
Silica, uses
(method for laminating solid polymer electrolyte film)
IT 7429-90-5, Aluminum, uses **9002-88-4**, Polyethylene
9003-07-0, Polypropylene
(method for laminating solid polymer electrolyte film)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 42 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:114405 HCAPLUS Full-text
DOCUMENT NUMBER: 130:184886
TITLE: Lithium batteries with solid electrolytes consisting of nonconducting **porous** polymer **film** filled with lithium ionic conductors
INVENTOR(S): Kamino, Maruo; Fujimoto, Masahisa; Noma, Toshiyuki; Nishio, Koji
PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11045725	A	19990216	JP 1997-215598	19970725
PRIORITY APPLN. INFO.:			JP 1997-215598	19970725

ED Entered STN: 19 Feb 1999
AB The solid electrolyte comprises nonconducting **porous** polymer **film**, having its pores filled with 20-65 weight% (based on the total of polymer **film** and inorg. electrolyte) Li ion-conducting inorg. electrolytes. Batteries with large discharge capacity and high discharge rate are obtained. Polyethylene was blended with liquid paraffin and LiTi2(PO4)3, formed into a **sheet**, and treated with methylene chloride for elution of paraffin to give a **porous sheet**. The pore of the prepared **sheet** was **laminated** on cathode and impregnated with

polyethylene glycol methacrylate-LiClO4 and irradiated with electron beam to give a polymer electrolyte. A battery obtained using the electrolyte showed excellent discharging characteristics.

IT **9002-88-4**, Polyethylene
(nonconducting polymer **film**; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)

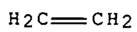
RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1

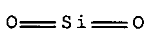
CMF C2 H4



IT **7631-86-9**, Silica, uses
(solid electrolyte; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)



IC ICM H01M006-18
ICS H01M006-18; C08J009-00; H01M010-40; C08K003-16; C08K003-22; C08K003-28; C08K003-30; C08K003-32; C08K003-34; C08K003-38; C08L101-00

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

IT **Porous materials**
(**films**, polymer; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)

IT **Battery electrolytes**
(lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)

IT Ionic conductors
(lithium; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)

IT Acrylic polymers, uses
Fluoropolymers, uses
Polyesters, uses
Polyolefins
(nonconducting polymer **film**; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)

IT **Films**
(**porous**, polymer; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)
IT Polymer electrolytes
(solid electrolyte; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)
IT 7439-93-2D, Lithium, polyethylene glycol methacrylate complexes, uses 9056-77-3D, Polyethylene glycol methacrylate, lithium complexes
(Li ionic conductor; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)
IT **9002-88-4**, Polyethylene
(nonconducting polymer **film**; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)
IT 1303-86-2, Boria, uses 1310-65-2, Lithium hydroxide 1314-34-7, Vanadium oxide (V2O3) 1314-56-3, Phosphorus oxide (P2O5), uses **7631-86-9**, Silica, uses 10377-51-2, Lithium iodide 12007-33-9, Boron sulfide (B2S3) 12031-66-2, Lithium tantalum oxide (LiTaO3) 12057-24-8, Lithium oxide (Li2O), uses 12136-58-2, Lithium sulfide (Li2S) 26134-62-3, Trilithium nitride 30622-39-0, Lithium titanium phosphate (LiTi2(PO4)3) 37220-89-6, Lithium β-alumina
(solid electrolyte; lithium battery electrolytes comprising nonconducting **porous** polymer **films** filled with Li ionic conductors)

L45 ANSWER 43 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:466303 HCAPLUS Full-text
DOCUMENT NUMBER: 129:97753
TITLE: Thin **film** electrolytes for lithium batteries
INVENTOR(S): Hamanaka, Katsuhiko; Yokoyama, Takayuki
PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10189049	A	19980721	JP 1996-343721	19961224
PRIORITY APPLN. INFO.:			JP 1996-343721	19961224

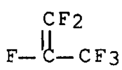
ED Entered STN: 28 Jul 1998
AB The electrolytes have a Li salt solution impregnated in and immobilized by microporous polyolefin membranes, having thickness 10-60 μm, average pore diameter 0.1-0.6 μm, porosity 75-90, open porosity 50-90%, and tensile strength ≥130kg/cm2 in the length direction.
IT **7631-86-9**, Nipsil lp, uses
(in manufacture of thin **film** electrolytes containing lithium salt solns. impregnated in **porous** polyolefin membranes for lithium batteries)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

O=Si=O

IT 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
(thin **film** electrolytes containing lithium salt solns. impregnated in **porous** polyolefin membrane **laminates** for lithium batteries)
RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (CA INDEX NAME)

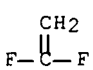
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



IT **9002-88-4**, Polyethylene
(thin **film** electrolytes containing lithium salt solns. impregnated in **porous** polyolefin membranes for lithium batteries)
RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

H2C=CH2

IC ICM H01M010-40

ICS C08J009-00
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
IT **Battery electrolytes**
(thin **film** electrolytes containing lithium salt solns. impregnated in **porous** polyolefin membranes for lithium batteries)
IT 117-81-7, Dop **7631-86-9**, Nipsil lp, uses
(in manufacture of thin **film** electrolytes containing lithium salt solns. impregnated in **porous** polyolefin membranes for lithium batteries)
IT **9011-17-0**, Hexafluoropropylene-vinylidene fluoride copolymer
(thin **film** electrolytes containing lithium salt solns. impregnated in **porous** polyolefin membrane **laminates** for lithium batteries)
IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate
108-32-7, Propylene carbonate **9002-88-4**, Polyethylene
14283-07-9, Lithium fluoroborate
(thin **film** electrolytes containing lithium salt solns. impregnated in **porous** polyolefin membranes for lithium batteries)

L45 ANSWER 44 OF 45 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:184087 HCAPLUS Full-text
DOCUMENT NUMBER: 128:206829
TITLE: Solid electrolyte composite for electrochemical reaction apparatus
INVENTOR(S): Bahar, Bamdad; Rusch, Gregg; Kolde, Jeffrey; Kato, Hiroshi; Mushiake, Noafumi
PATENT ASSIGNEE(S): Gore Enterprise Holdings, Inc., USA; Japan Gore-Tex Inc.
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
WO 9811614	A1	19980319	WO 1997-US16178		19970912
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW					
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
JP 10092444	A	19980410	JP 1996-265533		19960913
CA 2264830	A1	19980319	CA 1997-2264830		19970912
CA 2264830	C	20020611			
AU 9742687	A	19980402	AU 1997-42687		19970912
CN 1230293	A	19990929	CN 1997-197781		19970912
EP 958624	A1	19991124	EP 1997-941050		19970912
EP 958624	B1	20021204			
R: DE, FR, GB, IT					
US 6242135	B1	20010605	US 1997-928207		19970912
KR 2000036071	A	20000626	KR 1999-702078		19990312
PRIORITY APPLN. INFO.:			JP 1996-265533	A	19960913

WO 1997-US16178 W 19970912

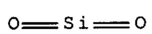
ED Entered STN: 28 Mar 1998

AB The composite possessing satisfactory ion conduction properties and having excellent mech. strength and heat resistance comprises a microporous polymeric **sheet** having its pores extending from 1 side to the other; the structure defining the pores being at least partly covered with a functional material selected from inorg. particulate, metal, and an organic polymer; and the pores of the **sheet** being at least partly filled with polymer electrolyte selected from polymer composition that contains metal salts, polymeric gels that contain electrolyte, and an ion exchange resin. The microporous polymeric **sheet** is expanded **porous** PTFE or ultrahigh mol. weight polyethylene. The functional material is a precious metal, fumed SiO2, silica gel, TiO2, C, or Pt.

IT **7631-86-9**, Silica, uses **9002-84-0**, PTFE
9002-88-4, Polyethylene **13463-67-7**, Titanium oxide
(TiO2), uses
(in solid electrolyte composite for electrochem. reaction apparatus)

RN 7631-86-9 HCAPLUS

CN Silica (CA INDEX NAME)

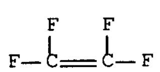


RN 9002-84-0 HCAPLUS

CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (CA INDEX NAME)

O=Ti=O

IC ICM H01M002-16
ICS H01M006-18; B01D069-14; H01M008-10; H01G009-02
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Battery electrolytes**
(solid composite)
IT 79-41-4D, Methacrylic acid, esters, polymers with acrylonitrile 107-13-1D, Acrylonitrile, polymers with methacrylate **7631-86-9**, Silica, uses **9002-84-0**, PTFE **9002-88-4**, Polyethylene **13463-67-7**, Titanium oxide (TiO_2), uses
(in solid electrolyte composite for electrochem. reaction apparatus)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 1995:874582 HCAPLUS Full-text
DOCUMENT NUMBER: 124:40012
TITLE: Electroplating of poly(tetrafluoroethylene) using plasma enhanced chemical vapor deposited titanium nitride as an interlayer
AUTHOR(S): Weber, A.; Dietz, A.; Poeckelmann, R.; Klages, C.-P.
CORPORATE SOURCE: Fraunhofer-Institut Schicht Oberflaechentechnik Bienroder Weg, Braunschweig, D-38108, Germany
SOURCE: Applied Physics Letters (1995), 67(16), 2311-13
CODEN: APPLAB; ISSN: 0003-6951
PUBLISHER: American Institute of Physics
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 24 Oct 1995
AB A low-temperature process for titanium nitride (TiN) deposition by an electron cyclotron resonance (ECR) plasma enhanced CVD process was applied to poly(tetrafluoroethylene) (PTFE). Tetrakis(dimethylamido)titanium introduced into the downstream region of a nitrogen ECR plasma was used as a precursor for TiN deposition at 100°. The thin TiN films (thickness 15-30 nm) act as interlayers to activate the electroless deposition of copper followed by an electroplating process. Prior to the deposition of the interlayer, the samples were treated on a biased susceptor with argon ions to enhance the adhesion of the TiN interlayer. This metalization procedure avoids the use of toxic and pollutive etching agents and yields adherent copper layers on PTFE. Films were characterized by four-point probe resistivity measurements, atomic force microscopy, and secondary ion mass spectrometry.
IT **7631-86-9**, Silica, uses
(TiN deposition on PTFE and on SiO_2)
RN 7631-86-9 HCAPLUS
CN Silica (CA INDEX NAME)

O=Si=O

```
IT   9002-84-0, Poly(tetrafluoroethylene)
        (electroplating on electroless copper on poly(tetrafluoroethylene)
        using plasma enhanced chemical vapor deposited titanium nitride as
        interlayer)
RN   9002-84-0  HCAPLUS
CN   Ethene, 1,1,2,2-tetrafluoro-, homopolymer  (CA INDEX NAME)

     CM   1

     CRN  116-14-3
     CMF  C2 F4
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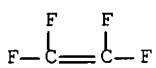

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CC   72-8 (Electrochemistry)
     Section cross-reference(s): 38, 56, 75
IT   Polymer morphology
        (of TiN with and without TiN coating)
IT   7631-86-9, Silica, uses
        (TiN deposition on PTFE and on SiO2)
IT   9002-84-0, Poly(tetrafluoroethylene)
        (electroplating on electroless copper on poly(tetrafluoroethylene)
        using plasma enhanced chemical vapor deposited titanium nitride as
        interlayer)


=> d que l72
L2           43 SEA FILE=REGISTRY ABB=ON  PLU=ON  (105-58-8/BI OR 107-31-3/
                BI OR 108-32-7/BI OR 109-94-4/BI OR 109-99-9/BI OR
                110-71-4/BI OR 12003-67-7/BI OR 1344-28-1/BI OR 13463-67-7/
                BI OR 14283-07-9/BI OR 14807-96-6/BI OR 21324-40-3/BI OR
                24937-79-9/BI OR 25014-41-9/BI OR 25322-68-3/BI OR
                25322-69-4/BI OR 28960-88-5/BI OR 33454-82-9/BI OR
                616-38-6/BI OR 623-53-0/BI OR 67-64-1/BI OR 67-68-5/BI OR
                68-12-2/BI OR 7631-86-9/BI OR 7791-03-9/BI OR 872-50-4/BI
                OR 9002-84-0/BI OR 9002-86-2/BI OR 9002-88-4/BI OR
                9003-07-0/BI OR 9003-20-7/BI OR 9003-21-8/BI OR 9003-32-1/B
                I OR 9003-42-3/BI OR 9003-49-0/BI OR 9003-63-8/BI OR
                9004-34-6/BI OR 90076-65-6/BI OR 9011-14-7/BI OR 9011-17-0/
                BI OR 96-47-9/BI OR 96-48-0/BI OR 96-49-1/BI)
L3            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9002-86-2/RN
L4            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9002-88-4/RN
L5            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9003-07-0/RN
L6            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9004-34-6/RN
L7            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9011-17-0/RN
L8            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  25014-41-9/RN
L9           21 SEA FILE=REGISTRY ABB=ON  PLU=ON  POLYIMIDE?/CN
L10           6 SEA FILE=REGISTRY ABB=ON  PLU=ON  POLYSULFONE?/CN
L11          34 SEA FILE=REGISTRY ABB=ON  PLU=ON  POLYURETHANE?/CN
L12           2 SEA FILE=REGISTRY ABB=ON  PLU=ON  NYLON/CN
L13           8 SEA FILE=REGISTRY ABB=ON  PLU=ON  L2 AND 1-100/F
L14           4 SEA FILE=REGISTRY ABB=ON  PLU=ON  L13 AND PMS/CI
L16           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  SILICA/CN
L17           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  TALC/CN
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L18          1 SEA FILE=REGISTRY ABB=ON  PLU=ON  ALUMINA/CN
L19          2 SEA FILE=REGISTRY ABB=ON  PLU=ON  "TITANIUM OXIDE"/CN
L20         98 SEA FILE=REGISTRY ABB=ON  PLU=ON  ZEOLITE?/CN
L21          1 SEA FILE=REGISTRY ABB=ON  PLU=ON  L2 AND  AL O2 . LI/MF
L22        104 SEA FILE=REGISTRY ABB=ON  PLU=ON  (L16 OR L17 OR L18 OR
               L19 OR L20 OR L21)
L23         69 SEA FILE=REGISTRY ABB=ON  PLU=ON  (L3 OR L4 OR L5 OR L6 OR
               L7 OR L8 OR L9 OR L10 OR L11 OR L12)
L24         72 SEA FILE=REGISTRY ABB=ON  PLU=ON  L23 OR L14
L25            QUE  ABB=ON  PLU=ON  L24
L26      83462 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "POLYMER MORPHOLOGY"+PFT,N
               T,OLD,NEW/CT
L27       9511 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "BATTERY ELECTROLYTES"+PFT
               ,NT,OLD,NEW/CT
L28     728541 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L22
L29      38363 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L28
L30        773 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29 AND L26
L32        187 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29 AND L27
L33            QUE  ABB=ON  PLU=ON  FILM# OR LAMIN? OR THINFILM? OR LAYE
               R? OR OVERLAY? OR OVERLAID? OR LAMEL? OR MULTILAYER? OR S
               HEET?
L34         96 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND L33
L35         95 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L34 AND ELECTROCHEM?/SC,SX

L36         26 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND POROUS?
L37      52918 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "POROUS MATERIALS"+PFT,NT,
               OLD,NEW/CT
L38          2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L35 AND L37
L39          5 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30 AND ELECTROCHEM?/SC,SX

L40     140211 SEA FILE=HCAPLUS ABB=ON  PLU=ON  COMPOSITES+PFT,NT,OLD,NEW/
               CT
L41         87 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40 AND L30
L42         17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L32 AND L40
L43          2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 AND BATTER?
L44          2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L41 AND (BATTER? OR
               CATHOD? OR ANOD? OR ELECTROD?)
L45         45 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L36 OR L38 OR L39 OR L42
               OR L43 OR L44
L47          3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FIRST POROUS POLYMER?
L48          2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  SECOND POROUS POLYMER?
L49       4721 SEA FILE=HCAPLUS ABB=ON  PLU=ON  POROUS POLYMER?
L50        200 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L49 AND L26
L51        164 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L50 NOT L25
L52          0 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L51 AND L27
L53          1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L51 AND BATTER?
L54          2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L47 AND L48
L55          3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L52 OR L53 OR L54)
L56          1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 NOT L45
L57      17719 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L25 AND L26
L58      16946 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L57 NOT L28
L59         11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L58 AND L27
L60         11 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L59 NOT L45
L61          3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L60 AND (COMPOSITE# OR
               L40)
L62          4 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L56 OR L61
L63       4429 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L40 AND L26
L65         37 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L63 AND ELECTROCHEM?/SC,SX

L66         36 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L65 NOT L45
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L67           34 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L66 NOT  L25
L68           35 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L66 NOT L28
L69           36 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L67 OR L68
L70            6 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L69 AND (PORE# OR POROUS)

L71           16 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L69 AND (BATTER? OR
                 CATHOD? OR ANOD? OR ELECTROD?)
L72           22 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L62 OR L70 OR L71


=> d l72 1-22 ibib ed abs hitstr hitind
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L72 ANSWER 1 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:602874 HCAPLUS Full-text

DOCUMENT NUMBER: 147:198828

TITLE: Controlling the dimensions of carbon nanofiber structures through the electropolymerization of pyrrole

AUTHOR(S): Fletcher, Benjamin L.; McKnight, Timothy E.; Fowlkes, Jason D.; Allison, David P.; Simpson, Michael L.; Doktycz, Mitchel J.

CORPORATE SOURCE: Molecular Scale Engineering and Nanoscale Technologies Research Group, Materials Science and Technology Division, Oak Ridge National Laboratory, Oak Ridge, TN, 37831, USA

SOURCE: Synthetic Metals (2007), 157(6-7), 282-289
CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 04 Jun 2007

AB Elec. conductive polymers, such as polypyrrole (PPy), show promise for modifying the dimensions and properties of micro- and nanoscale structures. Mechanisms for controlling the formation of PPy films of nanoscale thickness were evaluated by electrochem. synthesizing and examining PPy films on planar Au **electrodes** under a variety of growth conditions. Tunable PPy coatings were then deposited by electropolymn. on the sidewalls of individual, elec. addressable C nanofibers (CNFs). The ability to modify the phys. size of specific nanofibers in controllable fashion is demonstrated. The biocompatibility, potential for chemical functionalization, and ability to effect volume changes of this nanocomposite can lead to advanced functionality, such as specific, nanoscale valving of materials and morphol. control at the nanoscale.

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 35, 36

IT **Polymer morphology**
(of polypyrrole on carbon nanofibers)

IT **Nanocomposites**
(polypyrrole-carbon nanofiber)

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 2 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:527922 HCAPLUS Full-text

DOCUMENT NUMBER: 147:127671

TITLE: Formation and evaluation of electrochemically-active ultra-thin palladium-Nafion nanocomposite films

AUTHOR(S): Bertoncello, Paolo; Peruffo, Massimo; Unwin,

Patrick R.

CORPORATE SOURCE: Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK

SOURCE: Chemical Communications (Cambridge, United Kingdom) (2007), (16), 1597-1599 CODEN: CHCOFS; ISSN: 1359-7345

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 16 May 2007

AB A simple method for producing electrochem.-active Pd nanoparticles within ultra-thin Nafion films is described. Nafion films deposited on ITO **electrodes** are dipped in Pd nitrate solution and after removing the **electrodes** from this solution Pd is produced using NaBH4 as reducing agent. These Pd nanoparticles are electrocatalytically active for oxidation of hydrogen.

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 38, **52**, 56, 67

IT **Nanocomposites**
(formation and evaluation of electrochem.-active ultra-thin palladium-Nafion nanocomposite films and use as electrocatalysts for hydrogen oxidation)

IT **Polymer morphology**
(of Nafion film with and without Pd nanoparticles)

IT 50926-11-9, ITO
(formation and evaluation of electrochem.-active ultra-thin palladium-Nafion nanocomposite film on ITO **electrodes**)

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 3 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:492263 HCAPLUS Full-text

DOCUMENT NUMBER: 147:127658

TITLE: Separation and concentration effect of f-MWCNTs on electrocatalytic responses of ascorbic acid, dopamine and uric acid at f-MWCNTs incorporated with poly(neutral red) composite films

AUTHOR(S): Yogeswaran, Umasankar; Chen, Shen-Ming

CORPORATE SOURCE: Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei, 106, Taiwan

SOURCE: Electrochimica Acta (2007), 52(19), 5985-5996 CODEN: ELCAAV; ISSN: 0013-4686

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 07 May 2007

AB A novel conductive composite film containing functionalized multi-walled C nanotubes (f-MWCNTs) with poly(neutral red) (PNR) was synthesized on glassy C **electrodes** (GC) by potentiostatic method. The composite film exhibited promising electrocatalytic oxidation of mixture of biochem. compds. such as ascorbic acid (AA), dopamine (DA) and uric acid (UA) in pH 4.0 aqueous solns. It was also produced on Au **electrodes** by using electrochem. quartz crystal microbalance technique, which revealed that the functional properties of composite film were enhanced because of the presence of both f-MWCNTs and PNR. The surface morphol. of the polymer and composite film deposited on transparent semiconductor Sn oxide **electrodes** were studied using SEM and atomic force microscopy. These 2 techniques showed that the PNR was fibrous and incorporated on f-MWCNTs. The electrocatalytic responses of neurotransmitters at composite films were measured using both cyclic

voltammetry (CV) and differential pulse voltammetry (DPV). These expts. revealed that the difference in f-MWCNTs loading present in the composite film affected the electrocatalysis in such a way, that higher the loading showed an enhanced electrocatalytic activity. From further electrocatalysis studies, well separated voltammetric peaks were obtained at the composite film modified GC for AA, DA and UA with the peak separation of 0.17 V between AA-DA and 0.15 V between DA-UA. The sensitivity of the composite film towards AA, DA and UA in DPV technique is 0.028, 0.146 and 0.084 μA μM-1, resp.

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 9, 22, 35, 67, 80

IT Chemically modified **electrodes**
(functionalized multi-walled carbon-poly(neutral red) composite)

IT **Polymer morphology**
(of poly(neutral red) and poly(neutral red)-functionalized multi-walled carbon composite films on ITO)

IT **Composites**
(separation and concentration effect of functionalized MWCNTs on electrocatalytic oxidation of ascorbic acid, dopamine and uric acid at functionalized MWCNTs incorporated with poly(neutral red) composite films)

IT 7440-57-5, Gold, uses 50926-11-9, ITO
(functionalized multi-walled carbon-poly(neutral red) composite on **electrode** of)

REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 4 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1320119 HCAPLUS Full-text
DOCUMENT NUMBER: 146:237851
TITLE: Electrostatic assembly of polyaniline and platinum-poly(amidoamine) dendrimers hybrid nanocomposite multilayer, and its electrocatalysis towards CO and O2
AUTHOR(S): Yuan, Junhua; Han, Dongxue; Zhang, Yuanjian; Shen, YanFei; Wang, Zhijuan; Zhang, Qixian; Niu, Li
CORPORATE SOURCE: State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, Graduate School of the Chinese Academy of Sciences, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China
SOURCE: Journal of Electroanalytical Chemistry (2007), 599(1), 127-135
CODEN: JECHES
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 18 Dec 2006

AB The electrostatic layer-by-layer assembly method was successfully used in a multilayer buildup of polyaniline (PANI) and Pt nanocrystals encapsulated in the carboxyl-terminated poly(amidoamine) dendrimers (generation 4.5 G4.5COOH) (Pt-G4.5COOH NPs) on solid substrates. Multilayer growth was monitored by UV-visible (UV-visible) absorption spectroscopy. The AFM observation revealed a molecularly smooth (PANI/Pt-G4.5COOH NPs)m multilayer film which is rougher and thicker than the multilayer of PANI and G4.5COOH (G4.5COOH/PANI)m. The PANI/Pt-G4.5COOH NPs multilayers show a fast surface-confined electron-exchange process at the Au **electrode** in an acid solution, and remains stable, reversible and electroactive, even in neutral solution Also, the multilayers show a strong electrocatalytic response towards CO oxidation and O2 reduction,

and the catalytic capability can be easily tuned by the control of multilayer thickness.

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 36, 67

IT Multilayers
Nanocomposites
(electrostatic assembly of polyaniline and platinum-carboxy-terminated poly(amidoamine) dendrimers hybrid nanocomposite multilayers and use as electrocatalysts for CO oxidation and O2 reduction)

IT **Polymer morphology**
(polyaniline and platinum-carboxy-terminated poly(amidoamine) dendrimers hybrid nanocomposite bilayers)

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 5 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1267838 HCAPLUS Full-text
DOCUMENT NUMBER: 146:187396
TITLE: Pore-filling solvent-free polymer electrolytes based on porous P(VdF-HFP)/P(EO-EC) membranes for rechargeable lithium batteries
AUTHOR(S): Jeon, Jae-Deok; Kwak, Seung-Yeop
CORPORATE SOURCE: Hyperstructured Organic Materials Research Center (HOMRC), School of Materials Science and Engineering, Seoul National University, Seoul, 151-744, S. Korea
SOURCE: Journal of Membrane Science (2006), 286(1+2), 15-21
CODEN: JMESDO; ISSN: 0376-7388
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 05 Dec 2006

AB Highly porous membranes consisting of poly(vinylidene fluoride-co-hexafluoropropylene) [P(VdF-HFP)] and poly(ethylene oxide-co-ethylene carbonate) [P(EO-EC)] were prepared by a phase inversion method using acetone as a solvent and ethylene glycol as a nonsolvent. The presence of viscous P(EO-EC) in the membranes not only contributes to their flexibility but also results in increases in their pore size and porosity. Pore-filling solvent-free polymer electrolytes (SPEs) were then prepared by filling the pores of the porous membranes with viscous P(EO-EC) complexed with LiCF3SO3. The ionic conductivities of the SPEs exhibit Arrhenius temperature dependences, with the highest value of 3.7 + 10-5 S/cm at 298 K for E-V6E4; E-VxEy' denotes an electrolyte with a P(VdF-HFP)/P(EO-EC) matrix (x/y by weight%) filled with P(EO-EC)/LiCF3SO3 (in the case of E-V6E4, .apprx.61%). The temperature dependences of ln τc (τc is the correlation time) obtained from 7Li NMR linewidth measurements were found for all the SPEs to consist of two distinct regions, above and below the temperature of the slope change, Tsc, with linear Arrhenius behavior in each region. Above Tsc, the temperature region in which the conductivity measurements were carried out, the correlation times, τc, and the corresponding activation energies, Ea, decrease with increases in the amount of P(EO-EC)/LiCF3SO3 electrolyte.

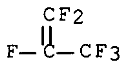
IT **9011-17-0**
(polymer electrolyte **composite** membranes with P(EO-EC) and P(EO-EC)/Li+ ion complexes; pore-filling solvent-free polymer electrolytes based on porous P(VdF-HFP)/P(EO-EC) membranes for rechargeable lithium batteries)

RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene

(CA INDEX NAME)

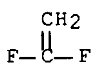
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 75-38-7
CMF C2 H2 F2



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
IT **Polymer morphology**
(of membranes; pore-filling solvent-free polymer electrolytes based on porous P(VdF-HFP)/P(EO-EC) membranes for rechargeable lithium batteries)
IT **Battery electrolytes**
Ionic conductivity
Polymer electrolytes
(pore-filling solvent-free polymer electrolytes based on porous P(VdF-HFP)/P(EO-EC) membranes for rechargeable lithium batteries)
IT 106818-19-3P
(**composite** membranes with P(VdF-HFP); pore-filling solvent-free polymer electrolytes based on porous P(VdF-HFP)/P(EO-EC) membranes for rechargeable lithium batteries)
IT **9011-17-0**
(polymer electrolyte **composite** membranes with P(EO-EC) and P(EO-EC)/Li+ ion complexes; pore-filling solvent-free polymer electrolytes based on porous P(VdF-HFP)/P(EO-EC) membranes for rechargeable lithium batteries)
IT 17341-24-1DP, complexes with Poly(ethylene oxide-ethylene carbonate), uses 106818-19-3DP, lithium ion complexes
(polymer electrolyte **composite** membranes with p(VdF-HFP) and P(EO-EC); pore-filling solvent-free polymer electrolytes based on porous P(VdF-HFP)/P(EO-EC) membranes for rechargeable lithium batteries)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 6 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:915212 HCAPLUS Full-text
DOCUMENT NUMBER: 145:445137

TITLE: Electrosynthesis of Macroporous Polyaniline-V2O5 Nanocomposites and Their Unusual Magnetic Properties
AUTHOR(S): Karatchevtseva, Inna; Zhang, Zhaoming; Hanna, John; Luca, Vittorio
CORPORATE SOURCE: Institute of Materials and Engineering Science, Australian Nuclear Science and Technology Organisation, Menai, 2234, Australia
SOURCE: Chemistry of Materials (2006), 18(20), 4908-4916
CODEN: CMATEX; ISSN: 0897-4756
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 08 Sep 2006
AB This paper reports a novel 2-step 1-pot all-electrochem. method for the preparation of interpenetrating conducting-polymer (polyaniline, PANI) semiconducting oxide (V2O5) nanocomposites. In the method, a spongy interconnected PANI network is 1st deposited on a Ti metal substrate. The **electrodeposited** PANI network has **pores** on the order of a few micrometers and is used as a template for the V2O5 component which is also deposited electrochem. The dimensionality of the amorphous V2O5 that forms can be controlled through control of the c.d. during the deposition, and this in turn reduces the porosity. As the c.d. increases and more V2O5 is deposited, Raman and XPS indicate that the conductivity of the PANI decreases. Regardless of the c.d. used in the range 1-5 mA/cm2, the 51V solid-state NMR spectrum of the V2O5 component shows a major resonance at .apprx.-8500 ppm which is ascribed to a Knight shift due to interaction of the PANI conduction electrons with the 51V nuclear spin. The magnitude of this 51V Knight shift is unprecedented exceeding by a significant margin any of those previously reported for V oxide compds.

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 35, 37, 73, 77

IT **Electrodeposits**
(composite, nanocomposites; unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT Polymerization
(electrochem.; electropolymn. of aniline on titanium plates in HClO4 solution and **electrodeposition** of V2O5 on polyaniline film and unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT **Electrodeposition**
(electropolymn. of aniline on titanium plates in HClO4 solution and **electrodeposition** of V2O5 on polyaniline film and unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT Polyanilines
(electropolymn. of aniline on titanium plates in HClO4 solution and **electrodeposition** of V2O5 on polyaniline film and unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT Binding energy
Polymer morphology
Raman spectra
UV and visible spectra
X-ray photoelectron spectra
(of polyaniline and polyaniline-V2O5 nanocomposites)

IT Magnetic properties
Nanocomposites
(unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT 25233-30-1P, Polyaniline
(electropolymn. of aniline on titanium plates in HClO4 solution and

electrodeposition of V2O5 on polyaniline film and unusual
magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT 1314-62-1P, Vanadium oxide (V2O5), processes
(electropolymn. of aniline on titanium plates in HClO4 solution and **electrodeposition** of V2O5 on polyaniline film and unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT 7440-32-6, Titanium, uses
(electropolymn. of aniline on titanium plates in HClO4 solution and **electrodeposition** of V2O5 on polyaniline film and unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT 7601-90-3, Perchloric acid, uses
(electropolymn. of aniline on titanium plates in HClO4 solution and **electrodeposition** of V2O5 on polyaniline film and unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

IT 62-53-3, Aniline, reactions
(electropolymn. of aniline on titanium plates in HClO4 solution and **electrodeposition** of V2O5 on polyaniline film and unusual magnetic properties of macroporous polyaniline-V2O5 nanocomposites)

REFERENCE COUNT: 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

ACCESSION NUMBER: 2006:750565 HCAPLUS Full-text
DOCUMENT NUMBER: 146:442577

TITLE: Electrochemical property of carbon nano-composite prepared via high dispersion of vapor-grown carbon fiber by adding polyfluorene

AUTHOR(S): Suematsu, Shunzo
CORPORATE SOURCE: Research Center, Nippon Chemi-con Corporation, 763 Arakawa, Takahagi-shi, Ibaraki, 318-8505, Japan

SOURCE: Tanso (2006), 223, 165-168
CODEN: TASOA3; ISSN: 0371-5345
PUBLISHER: Tanso Zairyo Gakkai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
ED Entered STN: 01 Aug 2006

AB Vapor-grown carbon fibers (VGCFs) were successfully dispersed by addition of polyfluorene (PF) in THF solvent without any reduction in length of the VGCFs. Degree of dispersion of the VGCFs in the solvent was enhanced as a ratio of PF to VGCF increases in the ratio ranged from 1/5 to 5/1, probably because of a polymer wrapping effect of the PF onto the surface of the VGCF. The dispersed PF-coated VGCFs (VGCF/PF) led to the fabrication of uniformly-coated **electrodes** because of their high dispersibility. Discharge behaviors of the VGCF/PF-based **electrodes** were also discussed in order to confirm feasibility of the VGCF/PF as an electroactive nano-composite.

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): **52**

IT Electric potential
(charge-discharge curves, for **electrodes**; electrochem. property of carbon nano-composite prepared via high dispersion of vapor-grown carbon fiber by adding polyfluorene)

IT Disperse systems
Dispersion (of materials)
Electric capacitance
Electric impedance
Electrodes
Polymer morphology
(electrochem. property of carbon nano-composite prepared via high dispersion of vapor-grown carbon fiber by adding polyfluorene)

IT **Nanocomposites**
(polyfluorene-vapor grown carbon fibers; electrochem. property of carbon nano-composite prepared via high dispersion of vapor-grown carbon fiber by adding polyfluorene)

L72 ANSWER 8 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:261879 HCAPLUS Full-text
DOCUMENT NUMBER: 144:315013
TITLE: Integrating the multifunction necessary for 3-D **batteries** into mesoporous nanoarchitectures
AUTHOR(S): Long, Jeffrey W.; Rhodes, Christopher P.; Lytle, Justin C.; Pettigrew, Katherine A.; Stroud, Rhonda M.; Rolison, Debra R.
CORPORATE SOURCE: U.S. Naval Research Laboratory, Washington, DC, 20375, USA
SOURCE: Preprints of Symposia - American Chemical Society, Division of Fuel Chemistry (2006), 51(1), 311-313
CODEN: PSADFZ; ISSN: 1521-4648
PUBLISHER: American Chemical Society, Division of Fuel Chemistry
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
ED Entered STN: 22 Mar 2006
AB A mesoporous MnO2/polymer/RuO2 nanocomposite material was developed with a polymer membrane that contained mobile Li ions. The benefit of the 5-30 nm thick solid polymer electrolyte was the improvement of the rate capability for charge transport. The electrochem. properties of the nanocryst. mixed-conducting oxides provided insight in the understanding of nanoionics.
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST mesoporous oxide ionic polymer membrane **battery**; manganese ruthenium oxide polymer membrane electrolyte lithium **battery**
IT Secondary **batteries**
(lithium; mesoporous MnO2/polymer/RuO2 nanocomposite material with polymer membrane as **battery** electrolyte)
IT **Battery** electrolytes
Nanocomposites
Nanocrystalline materials
Nanoparticles
Nanostructures
Polymer morphology
Pore size
Secondary **battery** separators
(mesoporous MnO2/polymer/RuO2 nanocomposite material with polymer membrane as **battery** electrolyte)
IT Polyoxyphenylenes
(mesoporous MnO2/polymer/RuO2 nanocomposite material with polymer membrane as **battery** electrolyte)
IT **Porous** materials
(mesoporous; mesoporous MnO2/polymer/RuO2 nanocomposite material with polymer membrane as **battery** electrolyte)
IT 1313-13-9, Manganese dioxide, uses 9041-80-9, Poly(phenylene oxide) 12036-10-1, Ruthenium dioxide
(mesoporous MnO2/polymer/RuO2 nanocomposite material with polymer membrane as **battery** electrolyte)
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 9 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:222157 HCAPLUS Full-text
DOCUMENT NUMBER: 144:441369
TITLE: Chemical and electrochemical synthesis of polyaniline/platinum composites
AUTHOR(S): Kinyanjui, John M.; Wijeratne, Neloni R.; Hanks, Justin; Hatchett, David W.
CORPORATE SOURCE: Department of Chemistry, University of Nevada, Las Vegas, NV, 89154-4003, USA
SOURCE: Electrochimica Acta (2006), 51(14), 2825-2835
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 13 Mar 2006
AB The synthesis of polyaniline/Pt composites (PANI/Pt) was achieved using both chemical and electrochem. methods. The direct chemical synthesis of PANI/Pt proceeds through the oxidation of aniline by PtCl62- in the absence of a secondary oxidant. SEM images of these samples indicate that the Pt particles are on the order of .apprx.1 μm for the chemical prepared composite. Electrochem. PANI/Pt synthesis is initiated by the uptake and reduction of PtCl62- into an a priori electrochem. deposited PANI film. This method produces a uniform dispersion of Pt particles with smaller particles with diams. ranging between 200 nm and 1 μm. Electrochem. methods may be more suitable for controlling particle dimension. Both materials show reduced proton doping relative to PANI without Pt, indicating the metal particles directly influence proton doping and the oxidation state of the polymer. The electrochem. data indicate that the conductivity in solution is sufficient such that the normal acid doping is attainable for PANI/Pt produced using either synthetic method.
CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 35, 36
IT UV and visible spectra
(in oxidative polymerization of aniline by PtCl62- or electrochem. uptake and reduction of PtCl62- in **electrodeposited** polyaniline in preparation of polyaniline/platinum composites)
IT **Polymer morphology**
(of polyaniline/platinum composites)
IT **Composites**
(oxidative polymerization of aniline by PtCl62- or electrochem. uptake and reduction of PtCl62- in **electrodeposited** polyaniline in preparation of polyaniline/platinum composites)
IT Polyanilines
(oxidative polymerization of aniline by PtCl62- or electrochem. uptake and reduction of PtCl62- in **electrodeposited** polyaniline in preparation of polyaniline/platinum composites)
IT Polymerization
(oxidative; of aniline by PtCl62- or electrochem. uptake and reduction of PtCl62- in **electrodeposited** polyaniline in preparation of polyaniline/platinum composites)
IT 16871-54-8, Hexachloroplatinate(2-)
(oxidative polymerization of aniline by PtCl62- or electrochem. uptake and reduction of PtCl62- in **electrodeposited** polyaniline in preparation of polyaniline/platinum composites)
IT 7440-06-4P, Platinum, preparation 25233-30-1P, Polyaniline
(oxidative polymerization of aniline by PtCl62- or electrochem. uptake and reduction of PtCl62- in **electrodeposited** polyaniline in preparation of polyaniline/platinum composites)
IT 62-53-3, Aniline, reactions
(oxidative polymerization of aniline by PtCl62- or electrochem. uptake and

reduction of PtCl62- in **electrodeposited** polyaniline in
preparation of polyaniline/platinum composites)

REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 10 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1152482 HCAPLUS Full-text

DOCUMENT NUMBER: 144:59755

TITLE: Preparation and cyclic voltammetry studies on nickel-nanoclusters containing polyaniline composites having layer-by-layer structures

AUTHOR(S): Trung, Tran; Trung, Tran Huu; Ha, Chang-Sik

CORPORATE SOURCE: Department of Electrochemical Technology and Metal Protection, Faculty of Chemical Technology, Hanoi University of Technology, Hanoi, 10-000, Vietnam

SOURCE: Electrochimica Acta (2005), 51(5), 984-990
CODEN: ELCAAV; ISSN: 0013-4686

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 28 Oct 2005

AB The authors suggest a novel route for the preparation of organic conductive polymer composites that are doped by the programmable controlled dispersion of Ni-nanoclusters into a polymer matrix having structure of layer-by-layer. The layered structures of polyaniline composites containing Ni-nanoclusters (PANI-Ni) were prepared electrochem. by a 2-pot process in 0.1M H2SO4 and 0.5M NiSO4. The authors discuss on what is intrinsic nature of the mutual influences of the PANI chains and Ni-nanoclusters within a PANI-Ni film, on the change in structural morphol., and on the broadening and shifts of **anodic** waves to higher potentials during cyclic voltammetry. Also the role of Ni-nanoclusters as a source supplying protons to promote the protonation to form polaron and bipolaron charge carriers of PANI is suggested.

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 35, 36, 56, 66

IT **Composites**
(electrochem. preparation and cyclic voltammetry studies on nickel-nanoclusters containing polyaniline composites having layer-by-layer structures)

IT Clusters
Nanoparticles
(nanoclusters; **electrodeposition** of nickel nanoclusters in polyaniline and cyclic voltammetry studies on nickel-nanoclusters containing polyaniline composites having layer-by-layer structures)

IT **Electrodeposition**
(of nickel nanoclusters in polyaniline and cyclic voltammetry studies on nickel-nanoclusters containing polyaniline composites having layer-by-layer structures)

IT **Polymer morphology**
(of polyaniline with nickel nanostructures on ITO **electrode**
)

IT 7440-02-0P, Nickel, processes
(**electrodeposition** of nickel nanoclusters in polyaniline and cyclic voltammetry studies on nickel-nanoclusters containing polyaniline composites having layer-by-layer structures)

IT 50926-11-9, ITO
(of polyaniline with nickel nanostructures on ITO **electrode**
)

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR

THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

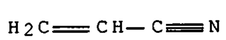
L72 ANSWER 11 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1099267 HCAPLUS Full-text
DOCUMENT NUMBER: 143:389765
TITLE: Polysiloxane-polyolefin **composite** gel electrolytes and lithium batteries thereof
INVENTOR(S): Miyagawa, Shinji; Yamaguchi, Shuichiro; Yatabe, Satoru; Koyama, Noboru
PATENT ASSIGNEE(S): Shirouma Science K. K., Japan; Fuji Heavy Industries Ltd.; Mitsui and Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005285377	A	20051013	JP 2004-93640	20040326
PRIORITY APPLN. INFO.:			JP 2004-93640	20040326

ED Entered STN: 13 Oct 2005
AB The electrolyte comprises (A) a 3-dimensionally crosslinked polymer network matrix in which a nonaq. solvent electrolyte solution is contained and (B) a non-crosslinked polymer containing (B1) terminal-protected ether-modified polysiloxanes and (B2) non-siloxane-type polymers in the polymer network matrix. Lithium batteries with the said electrolytes are also claimed. The electrolytes show easy penetration in porous separators high ion conductivity, and batteries with excellent charge-discharge characteristics are obtained.
IT **25014-41-9D**, Polyacrylonitrile, lithium complexes
(semi-interpenetrating polymer networks; polysiloxane-polyolefin semi-interpenetrating polymer networks gel electrolytes and lithium batteries thereof)
RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



IC ICM H01M010-40
ICS C08L083-12; C08L101-00; H01B001-06
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST polysiloxane polyolefin **composite** gel battery electrolyte; lithium battery polysiloxane polyolefin gel electrolyte
IT **Battery electrolytes**
Polymer electrolytes
(polysiloxane-polyolefin semi-interpenetrating polymer networks gel electrolytes and lithium batteries thereof)

IT **Interpenetrating polymer networks**
(semi-interpenetrating; polysiloxane-polyolefin semi-interpenetrating polymer networks gel electrolytes and lithium batteries thereof)

IT 7439-93-2D, Lithium, polymer complexes 9011-14-7D, Poly(methyl methacrylate), lithium complexes 24980-62-9D, Acrylonitrile-vinyl acetate copolymer, lithium complexes **25014-41-9D**, Polyacrylonitrile, lithium complexes 25322-68-3D, Polyethylene oxide, lithium complexes
(semi-interpenetrating polymer networks; polysiloxane-polyolefin semi-interpenetrating polymer networks gel electrolytes and lithium batteries thereof)

L72 ANSWER 12 OF 22 HCAPLUS

ACCESSION NUMBER: 2005:688148 HCAPLUS Full-text
DOCUMENT NUMBER: 144:313283
TITLE: Morphological and electrical properties of the adhesive for lithium ion **battery**
AUTHOR(S): Kuan, Hsu-Chiang; Kuan, Chen-Feng; Wu, Chen-Li; Ma, Chen-Chi M.; Chen, Adler; Pan, Yu-Hao
CORPORATE SOURCE: Department of Chemical Engineering, National Tsing Hua University, HsinChu, 300, Taiwan
SOURCE: Annual Technical Conference - Society of Plastics Engineers (2005), 63rd, 1676-1680
CODEN: ACPED4; ISSN: 0272-5223
PUBLISHER: Society of Plastics Engineers
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English

ED Entered STN: 03 Aug 2005

AB This research intends to investigate the utilization of **porous polymer** for Li-ion secondary **battery**. The phase separation method was used to control the porous condition. Various solvents were used to generate phase separation when epoxy resin was cured. The void distribution of **porous polymer** was observed by scanning electron microscope (SEM). Furthermore, the porous adhesive was applied to the Li-ion **battery**. The effects of adhesive on the capacity and the cycle life of Li-ion **battery** were investigated. Results showed that the porous epoxy adhesive did not change the electrochem. reaction of electrode. The **battery** properties, such as the capacity, cycle life and the 1st irrev % are significantly affected by the porous adhesive. The ratio of discharge to charge was over 90% in the coin-cell test. The capacity of **battery** decreased slightly (about 6.91%(23mAh/g)) as the coating area of adhesive reached 20%(1cm2). The real **battery** cycle life is more than 85% after 250 times test, which meets with the stds. of the com. grade.

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 52

ST epoxy resin adhesive morphol elec cond lithium ion **battery**

IT Adhesives
Electric conductivity
Polymer morphology
Secondary **batteries**
(morphol. and elec. properties of epoxy resin adhesive for lithium ion **battery**)

IT Epoxy resins, uses
(morphol. and elec. properties of epoxy resin adhesive for lithium ion **battery**)

IT 82077-32-5, 4,4'-Diaminodicyclohexylmethane-bisphenol A diglycidyl ether copolymer
(NPEL-128; morphol. and elec. properties of epoxy resin adhesive for lithium ion **battery**)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR

THIS RECORD. ALL CITATIONS AVAILABLE IN THE
RE FORMAT

L72 ANSWER 13 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:525119 HCAPLUS Full-text
DOCUMENT NUMBER: 144:213523
TITLE: Short carbon fiber-reinforced electrically conductive aromatic polydisulfide/expanded graphite nanocomposites
AUTHOR(S): Song, L. N.; Xiao, M.; Li, X. H.; Meng, Y. Z.
CORPORATE SOURCE: Institute of Energy & Environmental Materials, School of Physics & Engineering, Sun Yat-Sen University, Guangzhou, 510275, Peop. Rep. China
SOURCE: Materials Chemistry and Physics (2005), 93(1), 122-128
CODEN: MCHPDR; ISSN: 0254-0584
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 17 Jun 2005
AB Expanded graphite (EG) was prepared by exfoliation of expandable graphite under microwave irradiation Aromatic polydisulfide/EG nanocomposites were fabricated by absorbing cyclic arylene disulfide oligomers into EG **pores**. The nanocomposite precursor was hot-molded at 200° to carry out simultaneously ring-opening polymerization of the oligomers via a free radical mechanism. The resulting aromatic polydisulfide/EG nanocomposite exhibited an intercalated nanostructure as evidenced by transmission electron microscopy. Short carbon fibers (SCF) were used to further reinforce the aromatic polydisulfide/EG nanocomposites. The ternary polydisulfide/EG/SCF nanocomposites showed superior mech. properties and good elec. conductivity The ternary nanocomposites can be used as elec. conductive materials to prepare bipolar plates of polymer electrolyte membranes in fuel cells.
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): **52**
IT **Reinforced plastics**
(carbon fiber-reinforced; short carbon fiber-reinforced elec. conductive aromatic polydisulfide-expanded graphite nanocomposites)
IT **Polymer morphology**
(surface; short carbon fiber-reinforced elec. conductive aromatic polydisulfide-expanded graphite nanocomposites)
REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 14 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:448213 HCAPLUS Full-text
DOCUMENT NUMBER: 143:161777
TITLE: Thin films of endohedral metallofullerenes embedded in polythiophene: a facile electrochemical preparation
AUTHOR(S): Fan, Louzhen; Yang, Shangfeng; Yang, Shihe
CORPORATE SOURCE: Department of Chemistry, Hong Kong University of Science and Technology, Kowloon, Hong Kong
SOURCE: Thin Solid Films (2005), 483(1-2), 95-101
CODEN: THSFAP; ISSN: 0040-6090
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 27 May 2005

AB A new electrochem. route for the synthesis of a hybrid thin film of endohedral metallofullerene (Dy@C82 is used here) and polythiophene is presented, which exploits the unique, compatible redox properties of the couple. The electrochem. response of the resulting Dy@C82/polythiophene film resembles that of Dy@C82 in organic solvents except for the potential peak shifts, but is markedly different from that of a pure metallofullerene solid film. Both the polythiophene backbones and the Dy@C82 moieties appear to retain their individual electrochem. properties in the hybrid film. The film was characterized by UV-visible and FTIR absorption spectroscopy, time-of-flight secondary ion mass spectrometry, and SEM. Probably the Dy@C82 mols. were uniformly dispersed in the polythiophene matrix, forming a compact film. The formation and the electrochem. response of the hybrid film were systematically studied, refining the viable strategy for the encapsulation of metallofullerenes into conducting polymers.

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 35, 36, 78

IT **Composites**
(electrochem. preparation and properties of composite of incorporated Dy@C82 in polythiophene matrix)

IT Polymerization
(electrochem., oxidative; of thiophene in MeCN containing Bu4NPF6 on solution cast Dy@C82 film on ITO or Pt **electrodes** for Dy@C82-polythiophene composite film)

IT **Polymer morphology**
UV and visible spectra
(of polythiophene-Dy@C82 composite film)

IT 7440-06-4, Platinum, uses 50926-11-9, Indium tin oxide
(electrochem. preparation of thin films of endohedral metallofullerenes embedded in polythiophene by **anodic** polymerization of thiophene in MeCN containing Bu4NPF6 on solution cast Dy@C82 film on ITO or Pt **electrodes**)

IT 3109-63-5, Tetrabutylammonium hexafluorophosphate 142979-13-3, Dysprosium fulleride Dy@C82
(electrochem. preparation of thin films of endohedral metallofullerenes embedded in polythiophene by **anodic** polymerization of thiophene in MeCN containing Bu4NPF6 on solution cast Dy@C82 film on ITO or Pt **electrodes**)

IT 110-02-1, Thiophene
(electrochem. preparation of thin films of endohedral metallofullerenes embedded in polythiophene by **anodic** polymerization of thiophene in MeCN containing Bu4NPF6 on solution cast Dy@C82 film on ITO or Pt **electrodes**)

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 15 OF 22 HCAPLUS

ACCESSION NUMBER: 2004:1079048 HCAPLUS Full-text
DOCUMENT NUMBER: 142:201397
TITLE: Nafion-polyfurfuryl alcohol nanocomposite membranes for direct methanol fuel cells
AUTHOR(S): Liu, Jin; Wang, Huanting; Cheng, Shaoan; Chan, Kwong-Yu
CORPORATE SOURCE: Department of Chemistry, University of Hong Kong, Hong Kong SAR, Peop. Rep. China
SOURCE: Journal of Membrane Science (2005), 246(1), 95-101
CODEN: JMESDO; ISSN: 0376-7388
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 17 Dec 2004

AB Com. Nafion 115 membranes were successfully modified by in situ acid-catalyzed polymerization of furfuryl alc. (PFA) within Nafion structures. FTIR and AFM were used to characterize the chemical and morphol. structures of the Nafion-PFA nanocomposite membrane obtained. The methanol permeation expts. showed that the methanol flux through the Nafion-PFA nanocomposite membranes dropped by a factor of 2.2-2.7 when PFA loading was 3.9-8.0%. Importantly, the proton conductivity of the membranes decreased only slightly at a low PFA loading (< 8%). The nanocomposite membranes with higher selectivity (e.g., proton conductivity/methanol crossover) achieved a much higher DMFC performance at both room temperature and 60 °C.

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 36, 38, 76

IT **Interpenetrating polymer networks**
Membrane **electrodes**
Polymer morphology
(Nafion-polyfurfuryl alc. nanocomposite membranes for direct methanol fuel cells)

IT **Nanocomposites**
(membranes; Nafion-polyfurfuryl alc. nanocomposite membranes for direct methanol fuel cells)

IT 9002-84-0, PTFE 9003-55-8, Styrene-butadiene copolymer 9004-32-4, Carboxymethyl cellulose, sodium salt
(**electrode** binder; Nafion-polyfurfuryl alc. nanocomposite membranes for direct methanol fuel cells)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 16 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:974239 HCAPLUS Full-text
DOCUMENT NUMBER: 142:121993
TITLE: Chemical and Electrochemical Synthesis of Polyaniline/Gold Composites
AUTHOR(S): Kinyanjui, John M.; Hanks, Justin; Hatchett, David W.; Smith, Anthony; Josowicz, Mira
CORPORATE SOURCE: Department of Chemistry, University of Nevada, Las Vegas, NV, 89154-4003, USA
SOURCE: Journal of the Electrochemical Society (2004), 151(12), D113-D120
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 16 Nov 2004

AB The in situ synthesis of micrometer and nanometer Au particles in polyaniline (PANI/Au composite) using chemical or electrochem. methods, was compared. The direct chemical synthesis of PANI/Au is initiated via the spontaneous oxidation of aniline by AuCl4-. Au colloid formation and subsequent reaction with PANI is monitored by in situ UV/visible spectroscopy. The emergent polymer nucleates on the Au as the PANI chain length increases, encapsulates the metal, and ppts. as its solubility limit is exceeded. SEM images of these samples show relatively constant 1 μm diameter Au particles. Electrochem. PANI/Au synthesis is initiated by AuCl4- reduction into an a priori electrochem. deposited PANI film. This method also produces a nearly uniform dispersion of Au particles but with significantly smaller 150-300 nm particles. Electrochem. methods are more suitable for controlling particle dimensions. A minimal decrease in conductance is observed for the chemical formed PANI/Au when compared to PANI samples without the Au. A significant

decrease in conductance is observed for the electrochem. formed composite. The large decrease in conductance is related to the decrease in proton doping and a greater number of oxidized units in the polymer upon electrochem. uptake and reduction of AuCl4-.

CC 72-2 (**Electrochemistry**)
Section cross-reference(s): 35, 36, 56

IT **Electrodeposits**
(composite; polyaniline/gold)

IT **Electrodeposition**
(of gold in electrochem. polymerization of aniline in solution containing AuCl4- in preparation of polyaniline/gold composites)

IT **Polymer morphology**
(of polyaniline/gold composites)

IT **Composites**
(polyaniline/gold)

REFERENCE COUNT: 59 THERE ARE 59 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 17 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:964187 HCAPLUS Full-text

DOCUMENT NUMBER: 142:159452

TITLE: UV curing multi-component polymer blend electrolyte, lithium secondary **battery**, and preparation method thereof

INVENTOR(S): Cho, Byeong Won; Cho, Won Il; Kim, Hyeong Seon; Kim, Un Seok; Kim, Yong Tae; Lee, Hui U.; Song, Min Gyu

PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea

SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given CODEN: KRXXA7

DOCUMENT TYPE: Patent

LANGUAGE: Korean

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2003005256	A	20030117	KR 2002-713109	20020930
PRIORITY APPLN. INFO.:			KR 2002-713109	20020930

ED Entered STN: 12 Nov 2004

AB An UV-curing multi-component polymer blend electrolyte, a lithium secondary **battery** containing the electrolyte and their preparation methods are provided, to improve the adhesive strength, the mech. properties, the low and high temperature characteristic, the high rate discharge capacity, the lifetime, the capacity and the stability of a **battery**. The UV-curing multi-component polymer blend electrolyte comprises a function-I polymer; a function-II polymer; a function-III polymer; an organic electrolyte solution which is prepared by dissolving a lithium salt into an organic solvent; and optionally at least one selected from the group consisting of a plasticizer, a **porous** filler, a UV curing initiator and a curing accelerator. The function-I polymer is obtained by UV curing the ethylene glycol di(meth)acrylate oligomer CH2 = CR1COO(CH2CH2O)nCOCR2 = CH2, wherein R1 and R2 are independent each other and are H or Me group and n is an integer of 3-20; the function-II polymer is selected from the group consisting of polyacrylonitrile, poly(Me methacrylate) and their mixture; and the function-III polymer is selected from the group consisting of polyvinylidene fluoride, poly(vinyl chloride) and their mixture

Preferably the lithium salt is selected from the group consisting of LiPF6, LiClO4, LiAsF6, LiBF4, LiCF3SO3, Li(CF3SO2)2N and their mixts.; and the organic solvent is selected from the group consisting of ethylene carbonate, propylene carbonate, di-Et carbonate, di-Me carbonate, ethylmethyl carbonate and their mixts.

IC ICM H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35

ST polymer electrolyte lithium secondary **batter** photopolymn interpenetrating network blend

IT Adhesion, physical
Composites
Interpenetrating polymer networks
Plasticizers
Polymer electrolytes
(UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT Acrylic polymers, uses
(UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT Polymerization catalysts
(accelerators; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT Electric capacitance
(discharge capacity, improved; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT Secondary **batteries**
(lithium; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT Strength
(of polymer electrolyte; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT Crosslinking
Crosslinking catalysts
(photochem.; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT Fillers
(**porous**; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethylmethyl carbonate 7791-03-9, uses 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluoroPhosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium trifluoromethanesulfonate 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide
(UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT 26570-48-9DP, Poly(ethylene glycol) diacrylate, homopolymers and methacrylate derivative copolymers
(UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT 26570-48-9, Poly(ethylene glycol) diacrylate
(UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT 9002-86-2

(blends with acrylic polymers; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT 25014-41-9
(polymer blends with vinyl and acrylic polymers; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

IT 9011-14-7, Poly(methyl methacrylate)
(polymer blends with vinyl and acrylic polymers; UV curing multi-component polymer blend electrolyte lithium secondary **battery** and preparation method thereof)

L72 ANSWER 18 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:520121 HCAPLUS Full-text
DOCUMENT NUMBER: 141:207824
TITLE: A novel approach to prepare poly(3,4-ethylenedioxythiophene) nanoribbons between V2O5 layers by microwave irradiation
AUTHOR(S): Murugan, A. Vadivel; Kwon, C. W.; Campet, G.; Kale, B. B.; Mandale, A. B.; Sainker, S. R.; Gopinath, Chinnakonda S.; Vijayamohanan, K.
CORPORATE SOURCE: Centre for Materials for Electronics Technology (C-MET), Department of Information Technology, Government of India, Pune, 411008, India
SOURCE: Journal of Physical Chemistry B (2004), 108(30), 10736-10742
CODEN: JPCBFK; ISSN: 1520-6106
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

ED Entered STN: 29 Jun 2004

AB Rapid synthesis of poly(3,4-ethylenedioxythiophene) (PEDOT) nanoribbons interleaved between the layers of crystalline V2O5 is achieved for the first time under microwave irradiation via the redox intercalative polymerization reaction of 3,4-ethylenedioxythiophene (EDOT) monomer and crystalline V2O5 at different time intervals. Compared with the conventional 12 h of refluxing for intercalative polymerization, the microwave-assisted redox polymerization process proceeds rapidly, enabling the expansion of the interlayer spacing of crystalline V2O5 from 0.43 to 1.41 nm within 8 min. The characterization of this material using powder XRD, XPS, EPR, SEM, and HRTEM anal. supports the intercalation of the polymer between V2O5 layers, leading to enhanced bi-dimensionality. XPS anal. clearly shows the presence of mixed-valent V4+/V5+ in the V2O5 framework after the redox intercalative polymerization, which also confirms charge transfer from the polymer to the V2O5 framework. EPR study also reveals redox processes during EDOT insertion and polymerization between the V2O5 layers. After PEDOT insertion into V2O5, the EPR signal from VO2+ is more pronounced as the intensity of the signal increases as compared to that of pristine V2O5. This nanocomposite when coupled with a large-area Li foil **electrode** in 1 M LiClO4 in a mixture of ethylene and di-Me carbonate (1:1 by volume) gives a discharge capacity of .apprx.350 mA h g-1, which is significantly higher than that of pristine V2O5.

CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): **72**, 76

IT **Polymer morphology**
(lamellar; poly(3,4-ethylenedioxythiophene) nanoribbons preparation between V2O5 layers)

IT Conducting polymers
Cyclic voltammetry
Electric conductivity
Electric potential

Hybrid organic-inorganic materials
Nanocomposites
(poly(3,4-ethylenedioxythiophene) nanoribbons preparation between V2O5 layers)
IT 7439-93-2, Lithium, uses
(**electrode**; poly(3,4-ethylenedioxythiophene) nanoribbons preparation between V2O5 layers)
REFERENCE COUNT: 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

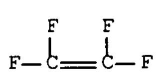
L72 ANSWER 19 OF 22 HCAPLUS
ACCESSION NUMBER: 2004:262980 HCAPLUS Full-text
DOCUMENT NUMBER: 140:407721
TITLE: Vanadium oxide nanofibers and vanadium oxide polyaniline nanocomposite: preparation, characterization and electrochemical behavior
AUTHOR(S): Lutta, Samuel T.; Dong, Hong; Zavalij, Peter Y.; Whittingham, M. Stanley
CORPORATE SOURCE: Chemistry Department and the Institute for Materials Research, State University of New York at Binghamton, Binghamton, NY, 13902-6016, USA
SOURCE: Materials Research Society Symposium Proceedings (2003), 788(Continuous Nanophase and Nanostructured Materials), 321-326
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 31 Mar 2004
AB The sol gel reaction of NH4VO3 and polymethylmethacrylate (PMMA) template followed by hydrothermal treatment formed (NH4)xV2O5-δ.nH2O rods. TGA, SEM, XRD and FTIR characterized this compound Heating (NH4)xV2O5-δ.nH2O in oxygen and nitrogen at 250° and 300° resp. resulted in the formation of vanadium oxides nanofibers of V3O7 and V2O5. Performance of these compds. as **cathode** in rechargeable lithium **battery** was investigated in a LiPF6/mixed carbonate electrolyte. The materials show good cycling with capacity greater than 130 mAh/g, which translates to the insertion of 0.5 mol of Li+ per vanadium of the active material.
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 40, 42, **52**
ST vanadium oxide polyaniline nanofiber nanocomposite rechargeable lithium **battery cathode**
IT Secondary **batteries**
(lithium; vanadium oxide nanofibers and vanadium oxide polyaniline nanocomposite as **cathode** of rechargeable lithium **battery**)
IT **Nanocomposites**
Nanofibers
Polymer morphology
(preparation and characterization of vanadium oxide nanofibers and vanadium oxide polyaniline nanocomposite)
IT **Battery cathodes**
(rechargeable lithium; application of vanadium oxide nanofibers and vanadium oxide polyaniline nanocomposite)
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 20 OF 22 HCAPLUS

ACCESSION NUMBER: 2004:210612 HCAPLUS Full-text
DOCUMENT NUMBER: 141:9523
TITLE: Gelified Co-continuous Polymer Blend System as Polymer Electrolyte for Li Batteries
AUTHOR(S): Passerini, S.; Lisi, M.; Momma, T.; Ito, H.; Shimizu, T.; Osaka, T.
CORPORATE SOURCE: ENEA, Rome, 00060, Italy
SOURCE: Journal of the Electrochemical Society (2004), 151(4), A578-A582
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 17 Mar 2004
AB The co-continuous polymer blend was synthesized for use as the electrolyte in lithium batteries. Such electrolytes were characterized by a co-continuous morphol. consisting of two three-dimensionally interpenetrating polymer networks simply formed by hot-mixing two non-miscible polymers. A preliminary electrochem. characterization of the gelled co-continuous polymer blend as electrolyte for lithium batteries is also reported.
IT **9002-84-0**, Teflon
(blend with Teflon, cathode; gelled co-continuous polymer blend system as polymer electrolyte for Li secondary batteries)
RN 9002-84-0 HCAPLUS
CN Ethene, 1,1,2,2-tetrafluoro-, homopolymer (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
IT **Battery electrolytes**
Gels
(gelled co-continuous polymer blend system as polymer electrolyte for Li secondary batteries)
IT **Polymer morphology**
(interpenetrating network, phase; gelled co-continuous polymer blend system as polymer electrolyte for Li secondary batteries)
IT **9002-84-0**, Teflon
(blend with Teflon, cathode; gelled co-continuous polymer blend system as polymer electrolyte for Li secondary batteries)
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
(gel **composites** with carbonates/lithium salts/; gelled co-continuous polymer blend system as polymer electrolyte for Li secondary batteries)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 21 OF 22 HCAPLUS
ACCESSION NUMBER: 2004:207992 HCAPLUS Full-text

DOCUMENT NUMBER: 140:397301
TITLE: Photoregulation of Mass Transport through a Photoresponsive Azobenzene-Modified Nanoporous Membrane
AUTHOR(S): Liu, Nanguo; Dunphy, Darren R.; Atanassov, Plamen; Bunge, Scott D.; Chen, Zhu; Lopez, Gabriel P.; Boyle, Timothy J.; Brinker, C. Jeffrey
CORPORATE SOURCE: Chemical and Nuclear Engineering Department and Center for Micro-Engineered Materials, University of New Mexico, Albuquerque, NM, 87131, USA
SOURCE: Nano Letters (2004), 4(4), 551-554
CODEN: NALEFD; ISSN: 1530-6984
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 16 Mar 2004
AB Photoresponsive nanoporous membranes, composed of monosized **pores** modified with azobenzene ligands, were prepared on an ITO working **electrode** using an evaporation-induced self-assembly procedure. They exhibited the size-selective photoregulated mass transport of two ferrocene-based mol. probes through the membrane to the **electrode** surface as determined using a chronoamperometry technique. The measured oxidative current increased and decreased in response to alternating UV and visible light exposure correlating strongly with the photoisomerization state of the azobenzene ligands. This indicates that the optically switchable conformation (trans or cis) of azobenzene ligands controls the effective **pore** size and, correspondingly, transport behavior on the nanoscale.
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): **72**
IT Isomerization
(cis-trans, photochem.; photocontrolled transport of ferrocene derivs. to **electrode** surface through photoresponsive nanoporous membrane prepared by evaporation-induced self-assembly of azobenzenesilane and silicate)
IT Polysiloxanes, properties
(membrane; photocontrolled transport of ferrocene derivs. to **electrode** surface through photoresponsive nanoporous membrane prepared by evaporation-induced self-assembly of azobenzenesilane and silicate)
IT **Polymer morphology**
(mesophase; transport of ferrocene derivs. to **electrode** via photoresponsive nanoporous membrane prepared by evaporation-induced self-assembly of azobenzenesilane and silicate in relation to)
IT Chronoamperometry
Electrochemical cells
Electrochemistry
Mass transfer
Nanocomposites
Pore size
Self-assembly
(photocontrolled transport of ferrocene derivs. to **electrode** surface through photoresponsive nanoporous membrane prepared by evaporation-induced self-assembly of azobenzenesilane and silicate)
IT 50926-11-9, ITO
(**electrode**; photocontrolled transport of ferrocene derivs. to **electrode** surface through photoresponsive nanoporous membrane prepared by evaporation-induced self-assembly of azobenzenesilane and silicate)

IT 685892-36-8, Tetraethyl silicate-4-(3-Triethoxysilylpropylureido)azobe
nzene copolymer
(membrane; photocontrolled transport of ferrocene derivs. to
electrode surface through photoresponsive nanoporous
membrane prepared by evaporation-induced self-assembly of azobenzenesilane
and silicate)

IT 1291-48-1 377776-55-1
(mol. probe; photocontrolled transport of ferrocene derivs. to
electrode surface through photoresponsive nanoporous
membrane prepared by evaporation-induced self-assembly of azobenzenesilane
and silicate)

IT 685895-75-4
(photocontrolled transport of ferrocene derivs. to
electrode surface through photoresponsive nanoporous
membrane prepared by evaporation-induced self-assembly of azobenzenesilane
and silicate)

IT 78-10-4, Tetraethyl silicate 529496-77-3
(photoresponsive nanoporous membrane on ITO **electrode**
prepared by evaporation-induced self-assembly of azobenzenesilane and
silicate for photoregulated mass transport of ferrocenes)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 22 OF 22 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:98731 HCAPLUS Full-text

DOCUMENT NUMBER: 140:322444

TITLE: Characterization of nanostructured organic-inorganic hybrid membranes

AUTHOR(S): Song, Min-Kyu; Hwang, Ji-Seok; Kim, Young-Taek; Rhee, Hee-Woo; Kim, Jinhwan

CORPORATE SOURCE: Department of Chemical Engineering, Sogang University, Seoul, 121-742, S. Korea

SOURCE: Molecular Crystals and Liquid Crystals (2003), 407, 421-428
CODEN: MCLCD8; ISSN: 1542-1406

PUBLISHER: Taylor & Francis, Inc.

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 06 Feb 2004

AB We prepared structurally stable organic-inorg. hybrid ionomer membrane in which nano-sized solid proton conductors were uniformly dispersed in an ion exchange polymer matrix. Nafion membrane was in-situ doped with zirconium hydrogen phosphate (ZHP) after phase-separated hydrophobic porogen, di-Bu phthalate, was leached out from Nafion membrane by di-Et ether and methanol co-solvent. FE-SEMicrographs showed that nanoporous structure in Nafion membrane was well developed by the solvent extraction process, and the **pores** were completely filled with in-situ doped ZHP particles. It was confirmed by FTIR study that hydrophilic ZHP fillers improved water retention of composite ionomer membrane at high temperature regions above 100°C. Consequently, the high temperature conductivity of Nafion/ZHP membranes was much higher than that of neat Nafion membrane.

CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): **52**, 76

IT Cation exchangers
Fuel cell separators
Membranes, nonbiological
Nanocomposites
Polymer morphology
(characterization of nanostructured organic-inorg. Nafion hybrid

```
        membranes)
IT   Pore
        (nanopore; characterization of nanostructured organic-inorg. Nafion
        hybrid membranes)
REFERENCE COUNT:          12     THERE ARE 12 CITED REFERENCES AVAILABLE FOR
                                 THIS RECORD. ALL CITATIONS AVAILABLE IN THE
                                 RE FORMAT
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                SEL RN

     FILE 'REGISTRY' ENTERED AT 08:29:00 ON 27 AUG 2007
L2           43 SEA ABB=ON  PLU=ON  (105-58-8/BI OR 107-31-3/BI OR
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                14283-07-9/BI OR 14807-96-6/BI OR 21324-40-3/BI OR
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                68-12-2/BI OR 7631-86-9/BI OR 7791-03-9/BI OR 872-50-4/BI
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                I OR 9003-42-3/BI OR 9003-49-0/BI OR 9003-63-8/BI OR
                9004-34-6/BI OR 90076-65-6/BI OR 9011-14-7/BI OR 9011-17-0/
                BI OR 96-47-9/BI OR 96-48-0/BI OR 96-49-1/BI)
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L7            1 SEA ABB=ON  PLU=ON  9011-17-0/RN
L8            1 SEA ABB=ON  PLU=ON  25014-41-9/RN
                E POLYIMIDE/CN
L9           21 SEA ABB=ON  PLU=ON  POLYIMIDE?/CN
                E POLYSULFONE/CN
L10           6 SEA ABB=ON  PLU=ON  POLYSULFONE?/CN
                E POLYURETHANE/CN
L11          34 SEA ABB=ON  PLU=ON  POLYURETHANE?/CN
                E NYLON/CN
L12           2 SEA ABB=ON  PLU=ON  NYLON/CN
L13           8 SEA ABB=ON  PLU=ON  L2 AND 1-100/F
L14           4 SEA ABB=ON  PLU=ON  L13 AND PMS/CI
L15           2 SEA ABB=ON  PLU=ON  L2 AND SILICA
                E SILICA/CN
L16           1 SEA ABB=ON  PLU=ON  SILICA/CN
                E TALC/CN
L17           1 SEA ABB=ON  PLU=ON  TALC/CN
                E ALUMINA/CN
L18           1 SEA ABB=ON  PLU=ON  ALUMINA/CN
                E TITANIUM OXIDE/CN
L19           2 SEA ABB=ON  PLU=ON  "TITANIUM OXIDE"/CN
                E ZEOLITE/CN
L20          98 SEA ABB=ON  PLU=ON  ZEOLITE?/CN
L21           1 SEA ABB=ON  PLU=ON  L2 AND  AL O2 . LI/MF
L22         104 SEA ABB=ON  PLU=ON  (L16 OR L17 OR L18 OR L19 OR L20 OR
                L21)
L23          69 SEA ABB=ON  PLU=ON  (L3 OR L4 OR L5 OR L6 OR L7 OR L8 OR
                L9 OR L10 OR L11 OR L12)
L24          72 SEA ABB=ON  PLU=ON  L23 OR L14

     FILE 'HCAPLUS' ENTERED AT 08:54:46 ON 27 AUG 2007
L25             QUE ABB=ON  PLU=ON  L24
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                 T
L28       728541 SEA ABB=ON  PLU=ON  L22
L29        38363 SEA ABB=ON  PLU=ON  L25 AND L28
L30          773 SEA ABB=ON  PLU=ON  L29 AND L26
L31            2 SEA ABB=ON  PLU=ON  L30 AND L27
L32          187 SEA ABB=ON  PLU=ON  L29 AND L27
L33              QUE ABB=ON  PLU=ON  FILM# OR LAMIN? OR THINFILM? OR LAYER?
                 OR OVERLAY? OR OVERLAID? OR LAMEL? OR MULTILAYER? OR
                 SHEET?
L34           96 SEA ABB=ON  PLU=ON  L32 AND L33
L35           95 SEA ABB=ON  PLU=ON  L34 AND ELECTROCHEM?/SC,SX
                 E POROUS/CT
L36           26 SEA ABB=ON  PLU=ON  L35 AND POROUS?
                 E  POROUS MATERIALS/CT
L37        52918 SEA ABB=ON  PLU=ON  "POROUS MATERIALS"+PFT,NT,OLD,NEW/CT
L38            2 SEA ABB=ON  PLU=ON  L35 AND L37
L39            5 SEA ABB=ON  PLU=ON  L30 AND ELECTROCHEM?/SC,SX
                 E   COMPOSITES/CT
L40       140211 SEA ABB=ON  PLU=ON  COMPOSITES+PFT,NT,OLD,NEW/CT
L41           87 SEA ABB=ON  PLU=ON  L40 AND L30
L42           17 SEA ABB=ON  PLU=ON  L32 AND L40
L43            2 SEA ABB=ON  PLU=ON  L41 AND BATTER?
L44            2 SEA ABB=ON  PLU=ON  L41 AND (BATTER? OR CATHOD? OR ANOD?
                 OR ELECTROD?)
L45           45 SEA ABB=ON  PLU=ON  L36 OR L38 OR L39 OR L42 OR L43 OR L44
L46            1 SEA ABB=ON  PLU=ON  L45 AND L1
L47            3 SEA ABB=ON  PLU=ON  FIRST POROUS POLYMER?
L48            2 SEA ABB=ON  PLU=ON  SECOND POROUS POLYMER?
L49         4721 SEA ABB=ON  PLU=ON  POROUS POLYMER?
L50          200 SEA ABB=ON  PLU=ON  L49 AND L26
L51          164 SEA ABB=ON  PLU=ON  L50 NOT L25
L52            0 SEA ABB=ON  PLU=ON  L51 AND L27
L53            1 SEA ABB=ON  PLU=ON  L51 AND BATTER?
L54            2 SEA ABB=ON  PLU=ON  L47 AND L48
L55            3 SEA ABB=ON  PLU=ON  (L52 OR L53 OR L54)
L56            1 SEA ABB=ON  PLU=ON  L55 NOT L45
L57        17719 SEA ABB=ON  PLU=ON  L25 AND L26
L58        16946 SEA ABB=ON  PLU=ON  L57 NOT L28
L59           11 SEA ABB=ON  PLU=ON  L58 AND L27
L60           11 SEA ABB=ON  PLU=ON  L59 NOT L45
L61            3 SEA ABB=ON  PLU=ON  L60 AND (COMPOSITE# OR L40)
L62            4 SEA ABB=ON  PLU=ON  L56 OR L61
L63         4429 SEA ABB=ON  PLU=ON  L40 AND L26
L64            2 SEA ABB=ON  PLU=ON  L63 AND L27
L65           37 SEA ABB=ON  PLU=ON  L63 AND ELECTROCHEM?/SC,SX
L66           36 SEA ABB=ON  PLU=ON  L65 NOT L45
L67           34 SEA ABB=ON  PLU=ON  L66 NOT  L25
L68           35 SEA ABB=ON  PLU=ON  L66 NOT L28
L69           36 SEA ABB=ON  PLU=ON  L67 OR L68
L70            6 SEA ABB=ON  PLU=ON  L69 AND (PORE# OR POROUS)
L71           16 SEA ABB=ON  PLU=ON  L69 AND (BATTER? OR CATHOD? OR ANOD?
                 OR ELECTROD?)
L72           22 SEA ABB=ON  PLU=ON  L62 OR L70 OR L71
L73           22 SEA ABB=ON  PLU=ON  L72 NOT L45
L74           11 SEA ABB=ON  PLU=ON  L73 AND L33
L75           22 SEA ABB=ON  PLU=ON  L73 OR
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